RTI: Distinguishing Reading Problems from Reading Disabilities

University of Texas

Sharon Vaughn

Special Education History in 3 slides

"I am the Executive Director of Special Education in my district and have been for the last 13 years. I have witnessed what has happened in our district over time.

For the previous 10 years there was a tremendous push to support all our students with disabilities in the general education classroom. While we saw many benefits from this approach, there was always the question of what makes this "specially designed instruction". Students were referred for evaluations for special education placement only to receive more of the same general education (now with some tutoring). Thus we saw students successfully completing (passing) their classes with our supports, but not really gaining the skills necessary to function independently. As a matter of fact, I believe we created more dependence from the students and the general educators."

History…cont.

" Several years ago, I really started challenging staff to tell me what was special about the services they were providing. Were we remediating deficits when possible and giving the student compensatory skills if not.   I didn't like the responses in most every case. Two years ago, we pulled the research on reading instruction and programs and adopted several programs for use with students with disabilities. We are now in the second year of implementation.

I have two main questions:

Cont.

1. What does research say is required in the form of staff development and training to give teachers adequate skills for teaching reading to struggling students?   Our district uses "Balanced Literacy" with Guided Reading - an approach that places an extreme level of trust on the skill level of the teacher for success. I only found one (1) research article that stated Balanced Literacy could be highly effect – *"in the hands of expert literacy instructors."* I failed to mention, our district is growing rapidly and we are opening new buildings and hiring new staff almost yearly. Many of the new teachers are inexperienced.

2. For adolescent students in our district who never received systemic, intense reading instruction at the primary and elementary grades, would the level of intensity you describe in Tier III be appropriate, or does research say it is too late to bring these students up significantly? We're talking about many bright LD students who are reading multiple years below grade level. "
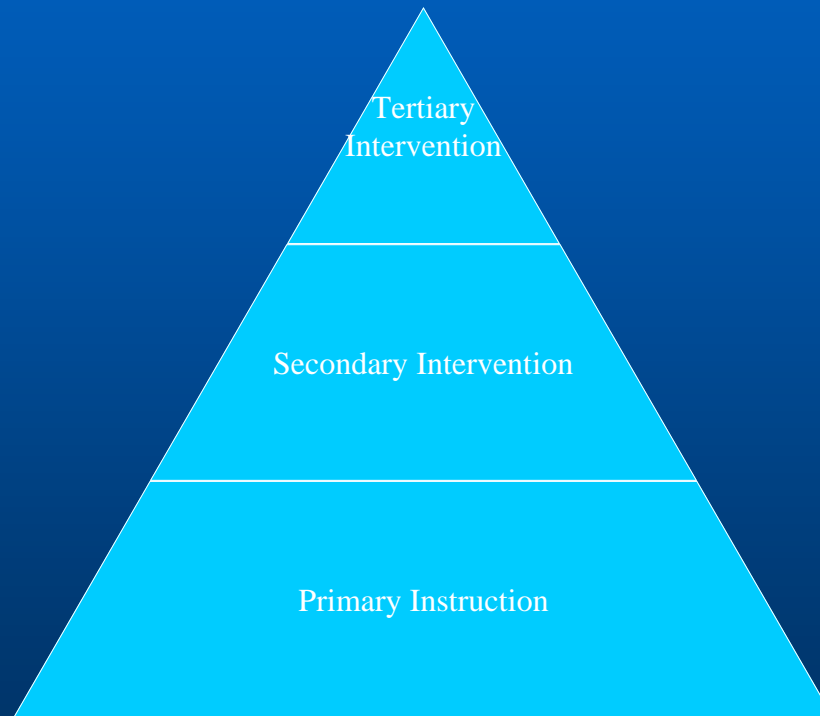
Cont.

"What advice do you have?

p.s.

How do we do RTI?"

Where did the triangle come from?

Facts About Prevention & RTI

- **1923, Edward A. Winslow described public health as the science of preventing disease – discussed 3 levels of prevention**

- **Public Health Approach included:**
    - **specifying risk factors,**
    - **evaluating interventions,**
    - **providing large-scale implementation,**
    - **using monitoring & assessment with research to determine effectiveness.**

RTI: What do we know the least about?

- **Accurately differentiating and treating "difficulty" from "disability"**

- **How to address needs of older students**

Minimal Responders

Vellutino, Scanlon, and Jaccard (2003, p.117) examined follow-up data on first grade students identified as at risk and provided tutoring. They confirm "that there are small but significant numbers of children who will require intensive and individualized remedial assistance for a period of time beyond that provided by the intervention project in order for them to become functionally independent readers."

Minimal Responders: 4 Years of Study

Students at risk for reading problems randomly assigned to TREATMENT or COMPARISON

T = researcher provided intervention

C = school provided intervention

High and Low Responders

- Remained in District from Fall 1st through Spring 2nd

- High Responders received intervention in 1st grade (10-20 weeks) – Exited

- Low Responders received intervention in 1st & 2nd grades (20 weeks each year; 40 weeks total)

Sample

High Responders

    34 Treatment (15 M, 19 F)

    36 Comparison (22 M, 14 F)

Low Responders

    14 Treatment (9 M, 5 F)

    24 Comparison (16 M, 8 F)

Criteria for Identifying Students At-Risk

Tier II Intervention Screening Period	Risk Criteria
Fall First Grade	**NWF<13** OR **PSF<10 and NWF<24**
Winter First Grade	**NWF<30 and ORF<20** OR **ORF<8**
Tier III Intervention Screening Period	Continued Risk Criteria
Fall Second Grade	**ORF<27**
Winter Second Grade	**ORF<70**

Tier II Research Intervention

- **Conducted in first grade**
- **Daily, 30-minute sessions in addition to Tier I instruction**
- **Small groups (4-6 students)**
- **Tutors hired and trained by research staff**

Tier II Research Intervention (cont'd)

- **Instruction provided:**
  - **Phonics and word recognition (15 minutes)**
  - **Fluency (5 minutes)**
  - **Passage reading and comprehension (10 minutes)**

Tier III Research Intervention

- **Participated in 1st and 2nd grade**
- **Daily, 50-minute sessions in addition to Tier I instruction**
- **Very small groups (2-4 students)**
- **Tutors hired and trained by research staff**

Tier III Research Intervention (cont'd)

- **Instruction provided:**
  - **Sound review (1-2 minutes)**
  - **Phonics and word recognition and vocabulary**

    (17-25 minutes)
  - **Fluency (5 minutes)**
  - **Passage reading and comprehension (12-20 minutes)**

PPVT Scores

Administered Spring 1st Grade

High Responders

 T = 89.68 (10.39)

 C = 89.33 (10.44)

Low Responders

 T = 80.93 (10.96)

 C = 85.67 (9.51)

WRMT-Word Attack

High Responders:

	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	101.50 (11.07)	111.71 (6.39)	113.26 (7.10)	97.29 (7.65)	NA	105.32 (13.96)
Comparison	96.15 (11.09)	108.53 (7.49)	107.89 (11.16)	103.09 (6.47)	NA	102.00 (11.71)

WRMT-Word Attack
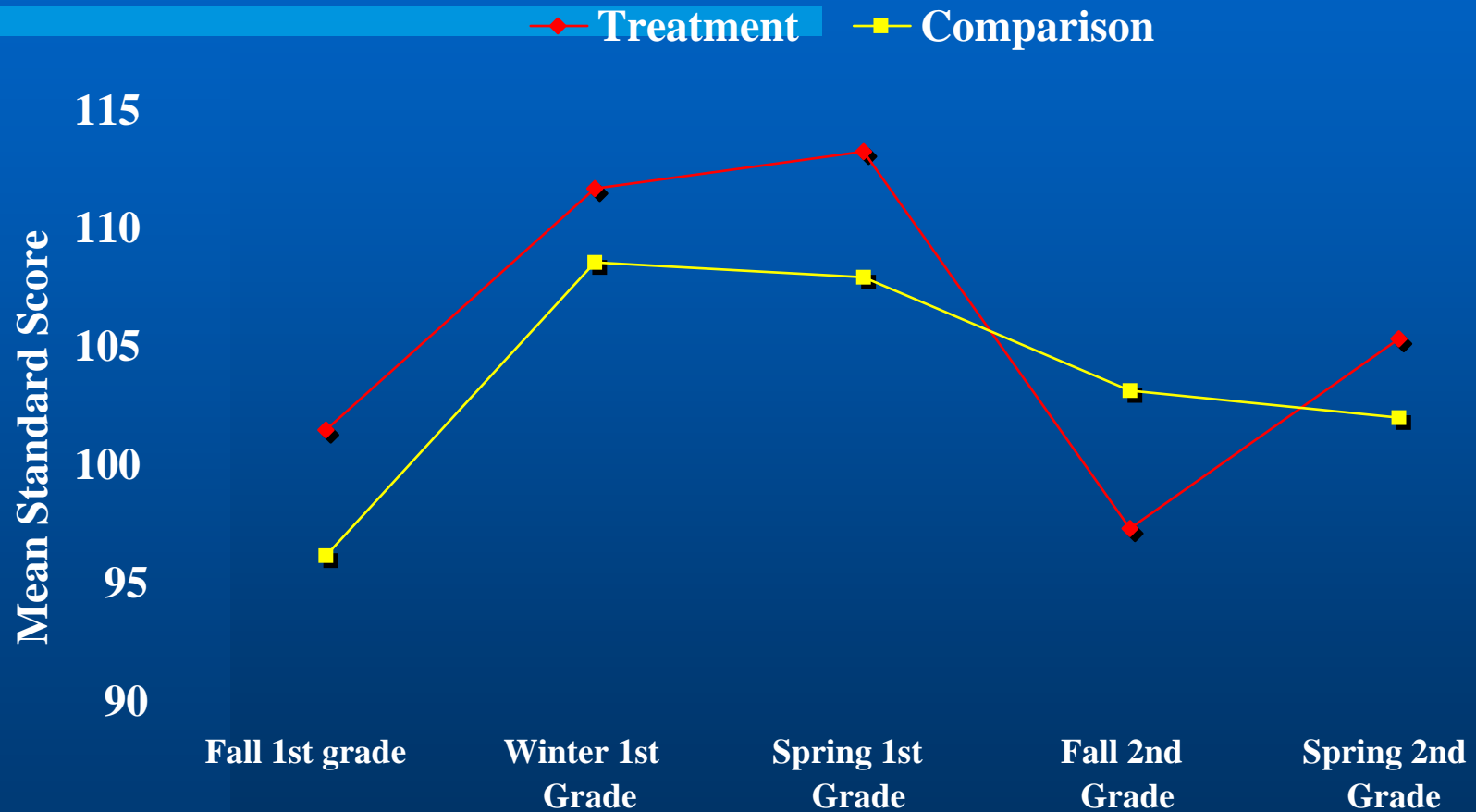
WRMT-Word Attack
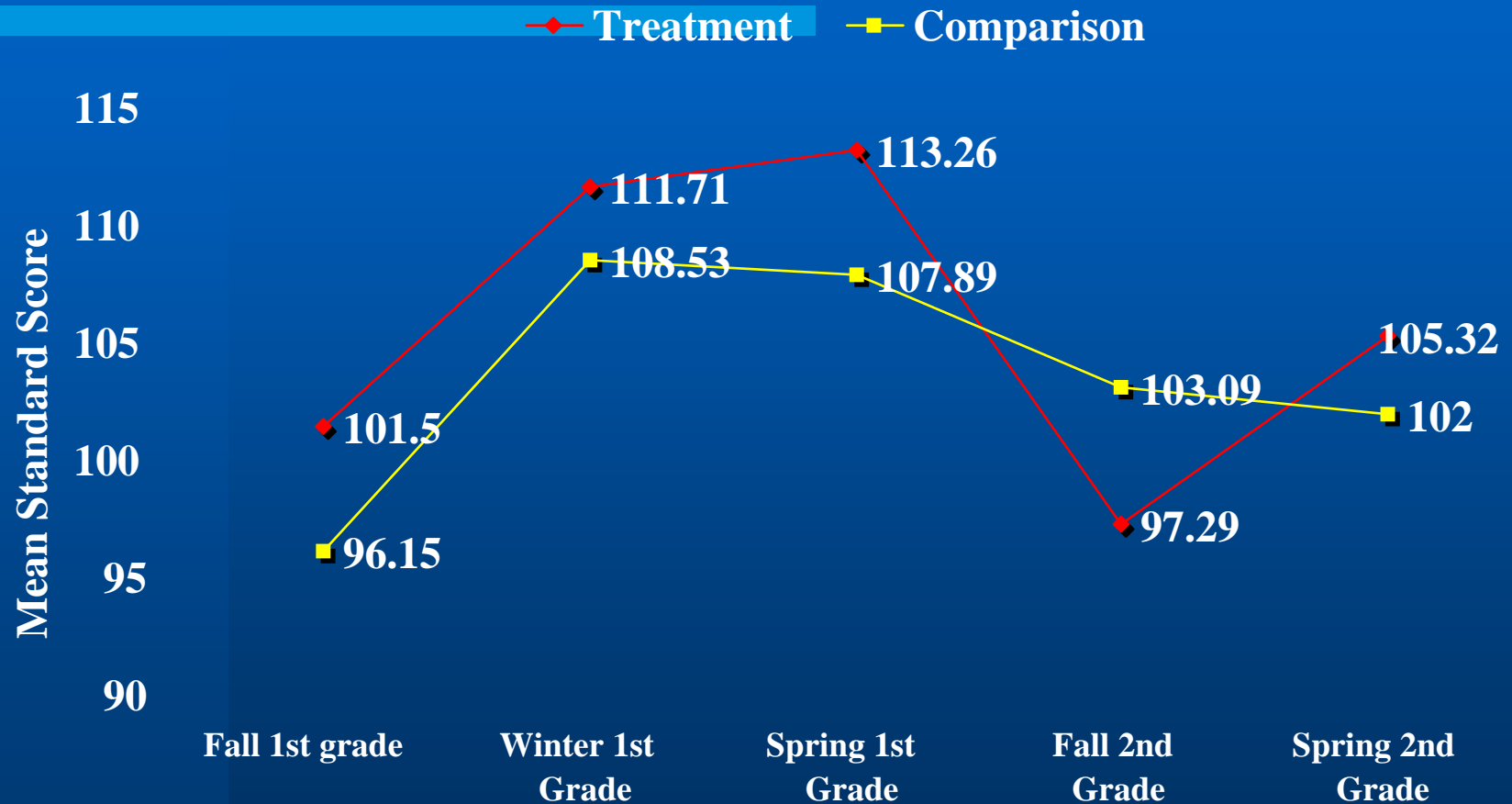
WRMT-Word Attack

Low Responders:

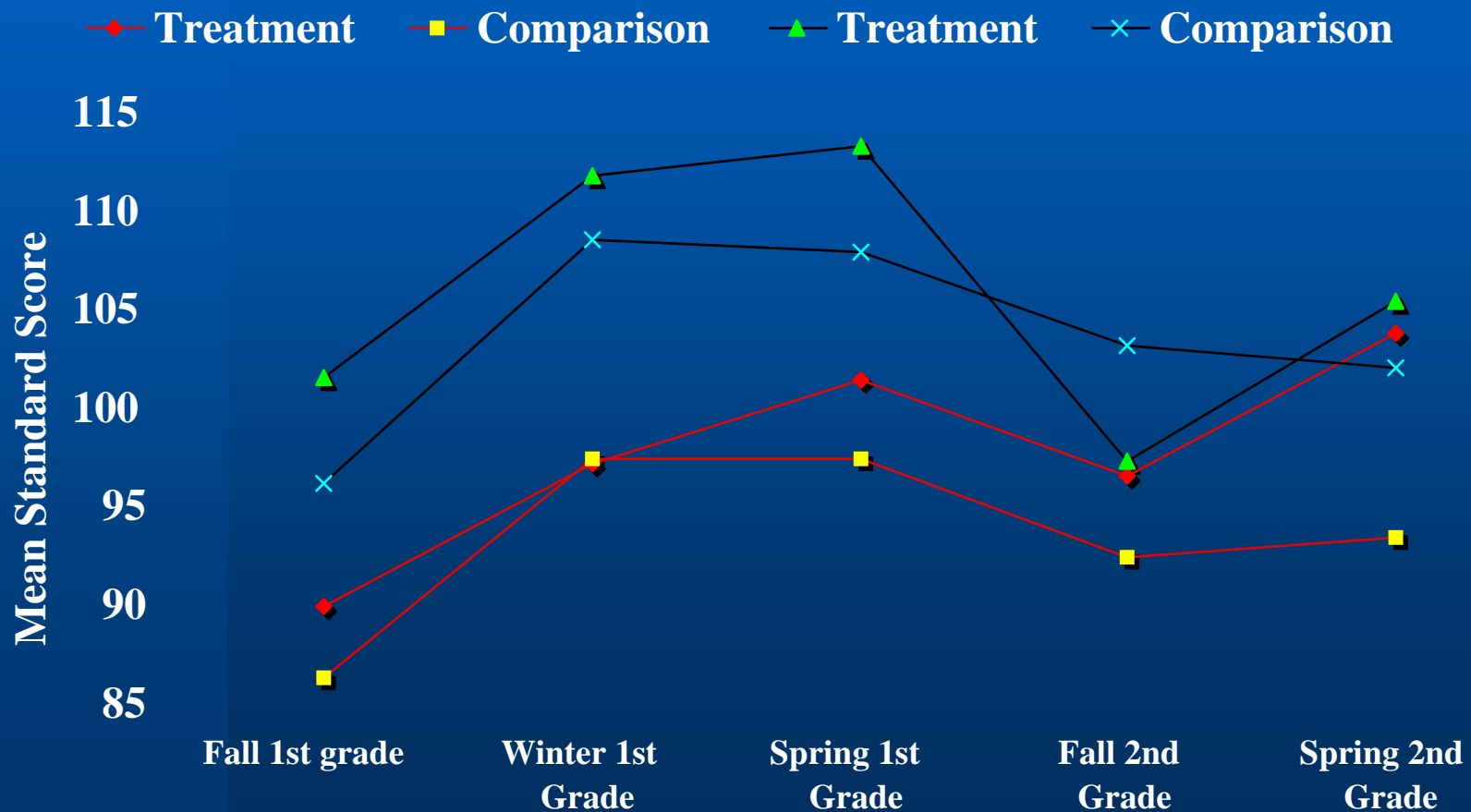|	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	89.86 (11.03)	97.14 (12.75)	101.36 (13.02)	96.50 (10.75)	99.71 (14.32)	103.79 (16.03)
Comparison	86.26 (9.36)	97.33 (12.95)	97.38 (11.99)	92.33 (7.78)	95.13 (7.94)	93.33 (9.45)

WRMT-Word Attack
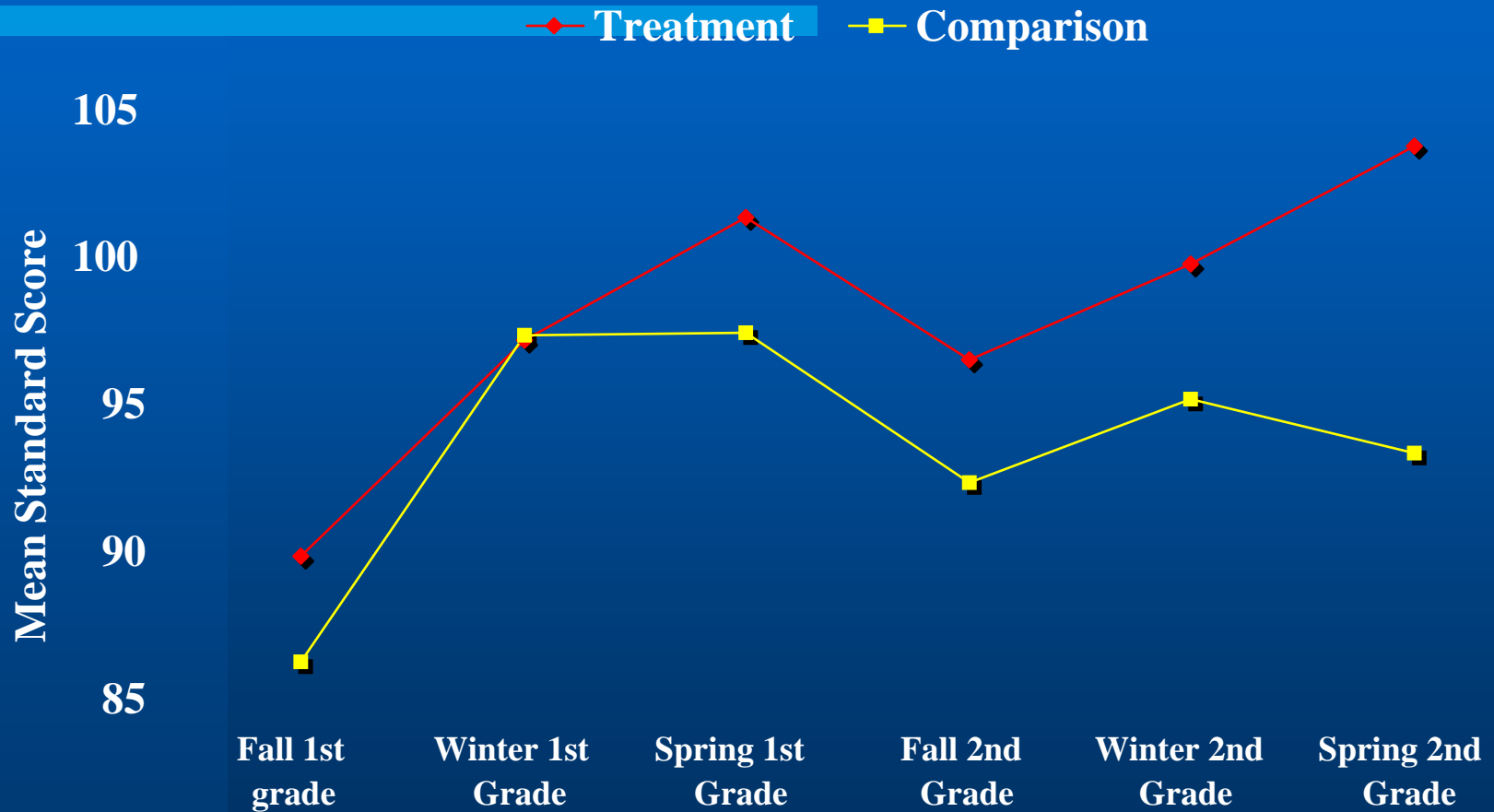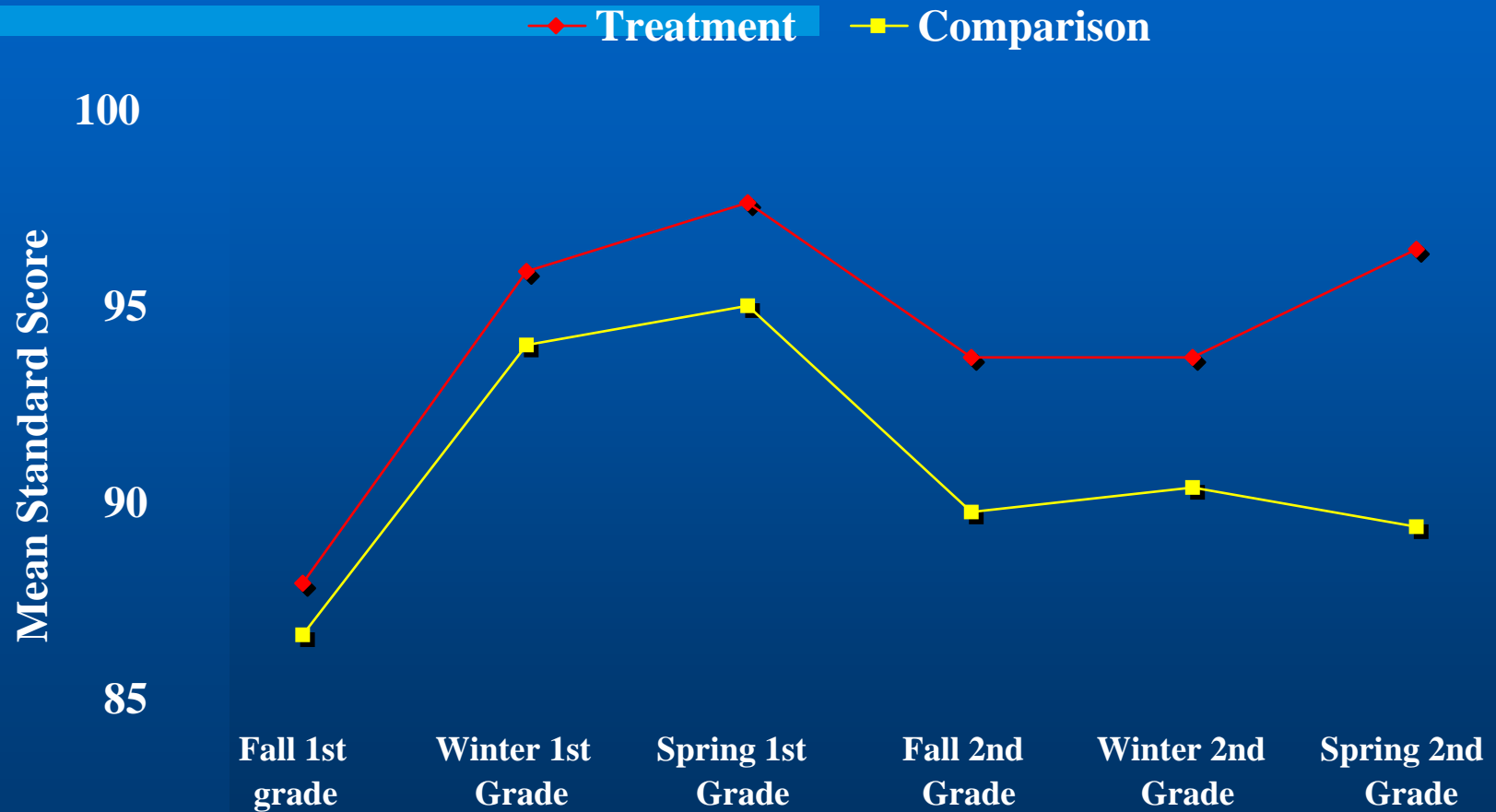
WRMT-Word Attack
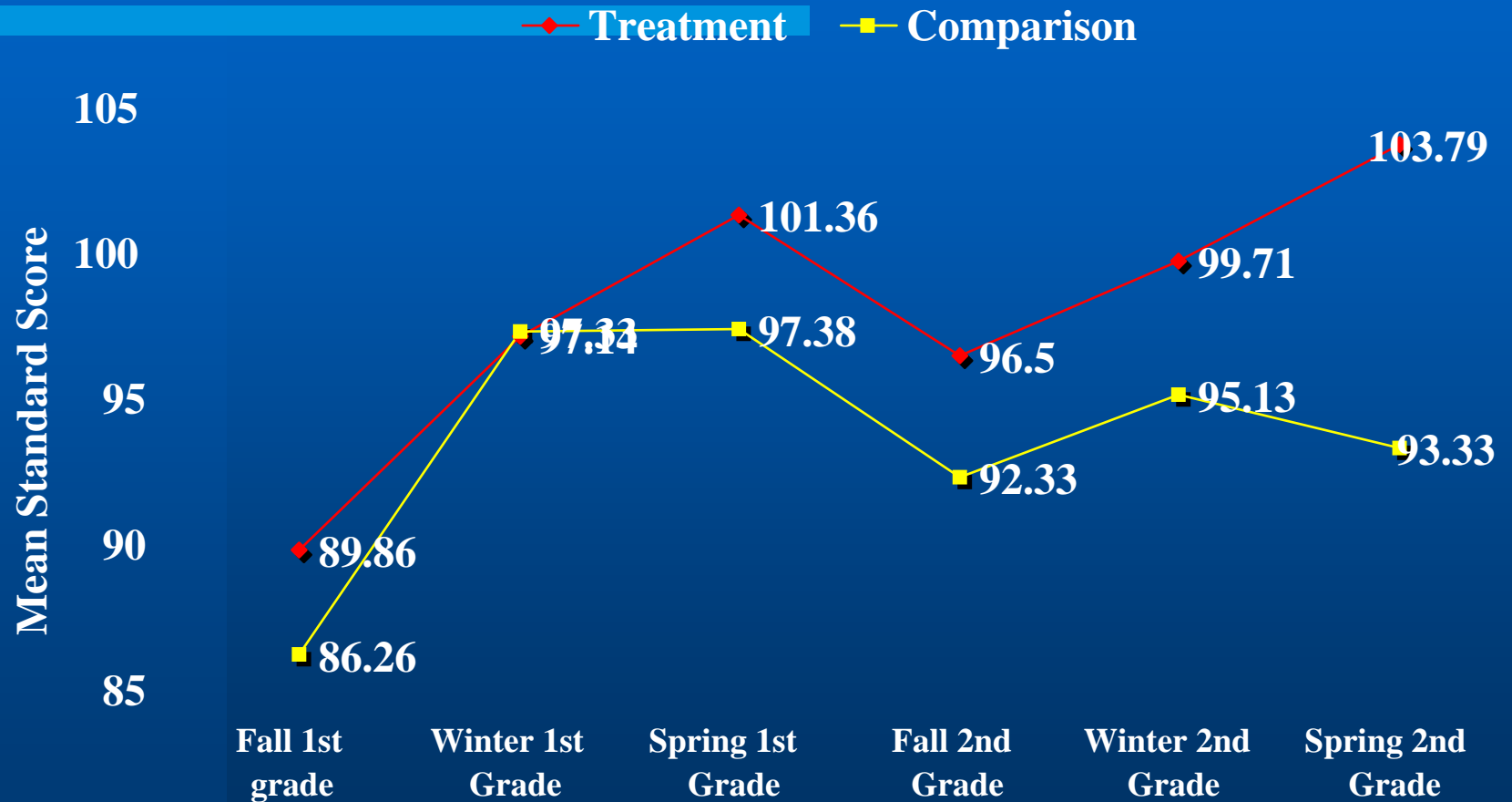
WRMT-Word Identification

High Responders:

	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	100.81 (9.61)	110.47 (8.59)	112.62 (9.61)	97.71 (5.79)	NA	105.97 (8.39)
Comparison	98.47 (9.52)	109.61 (9.03)	110.75 (10.77)	103.64 (8.78)	NA	102.79 (8.21)

WRMT-Word Identification
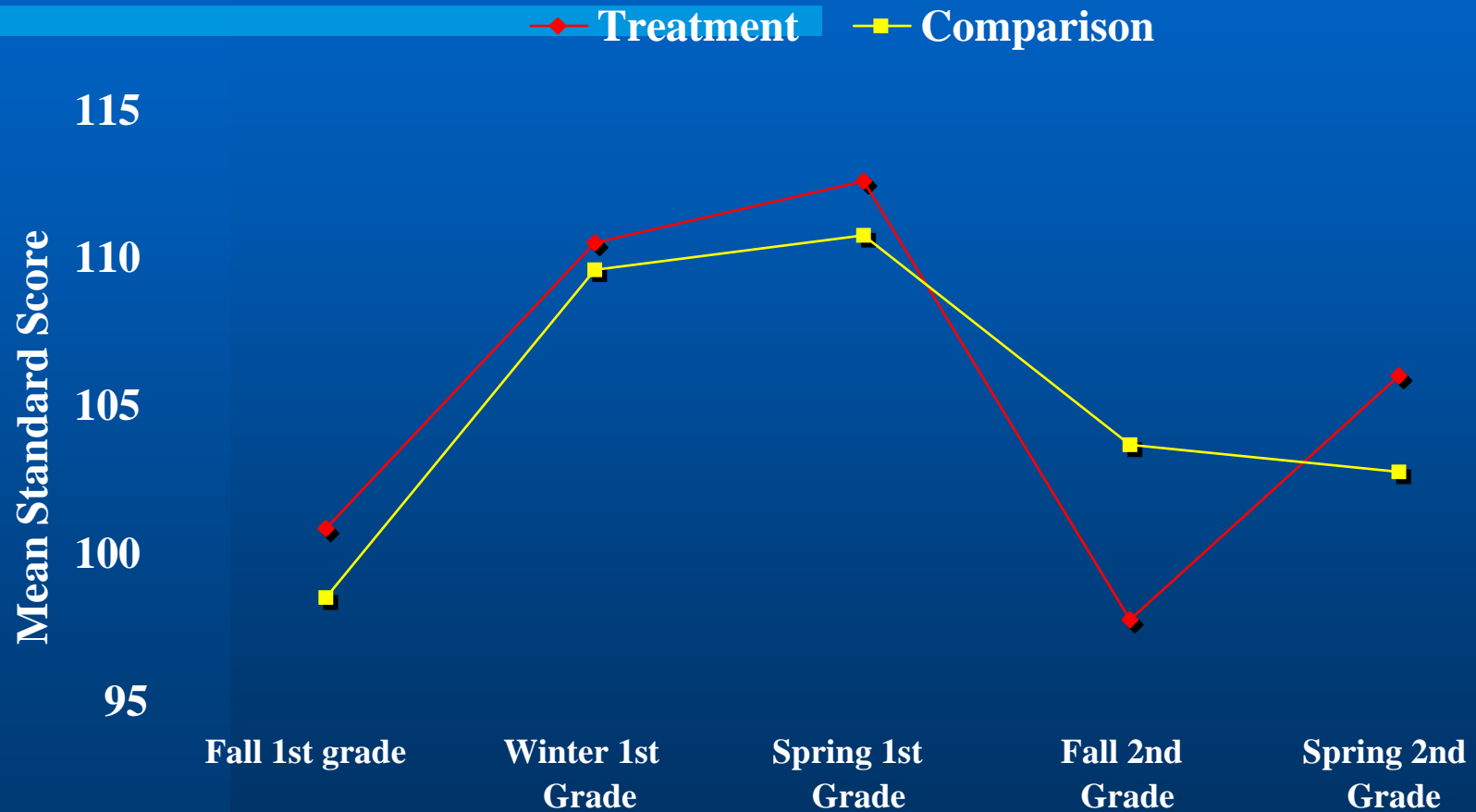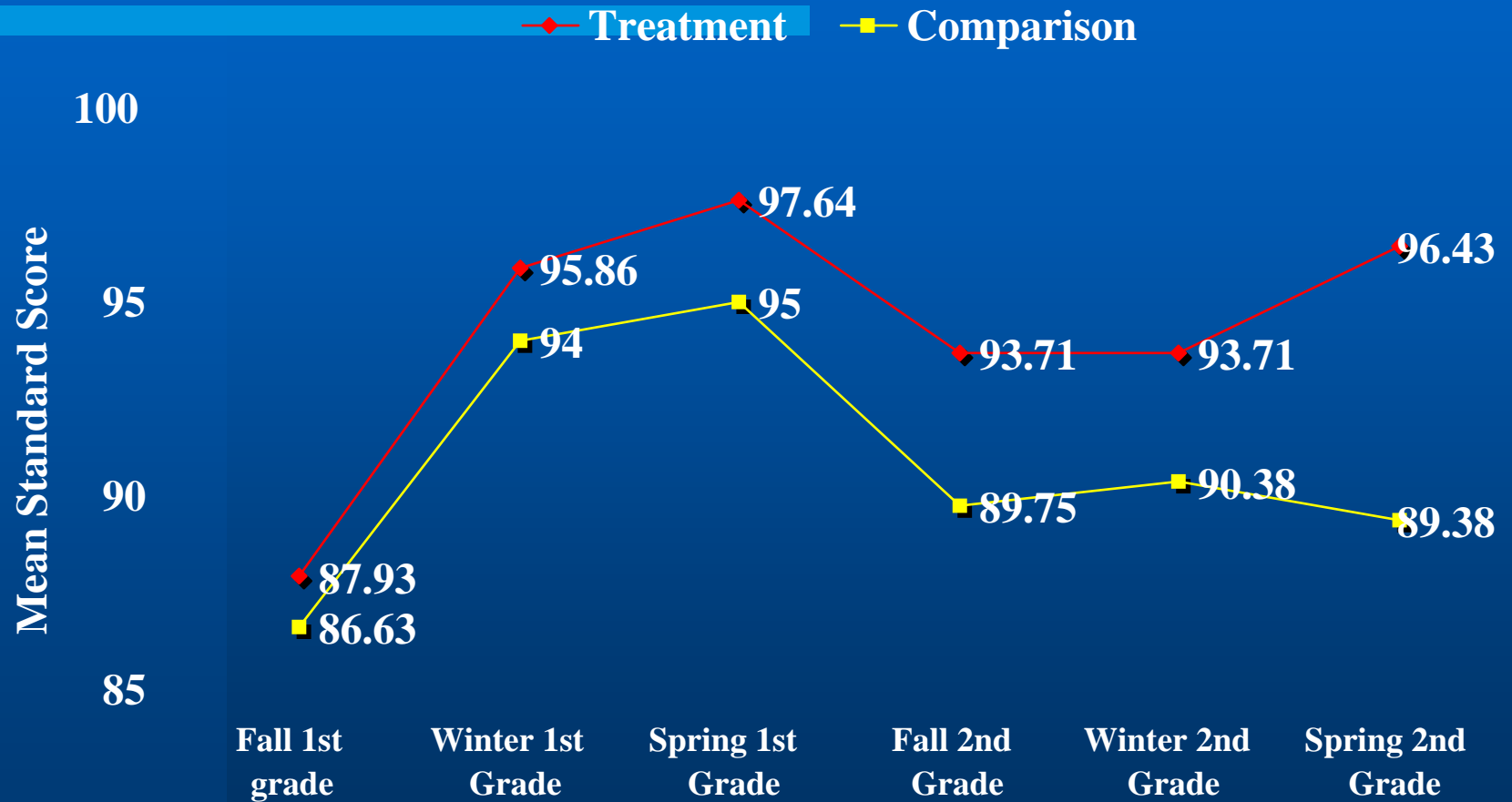
WRMT-Word Identification
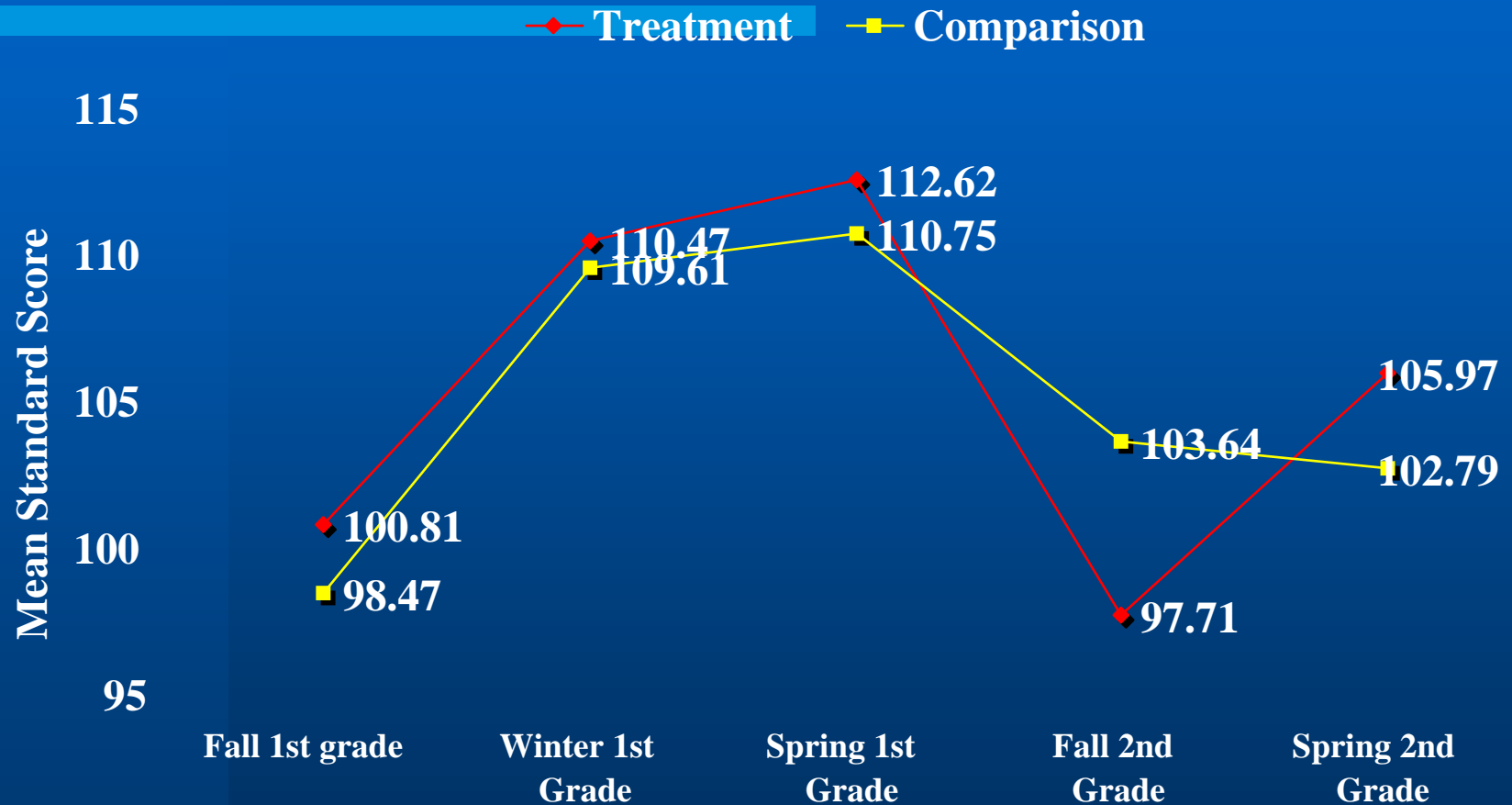
WRMT-Word Identification

Low Responders:

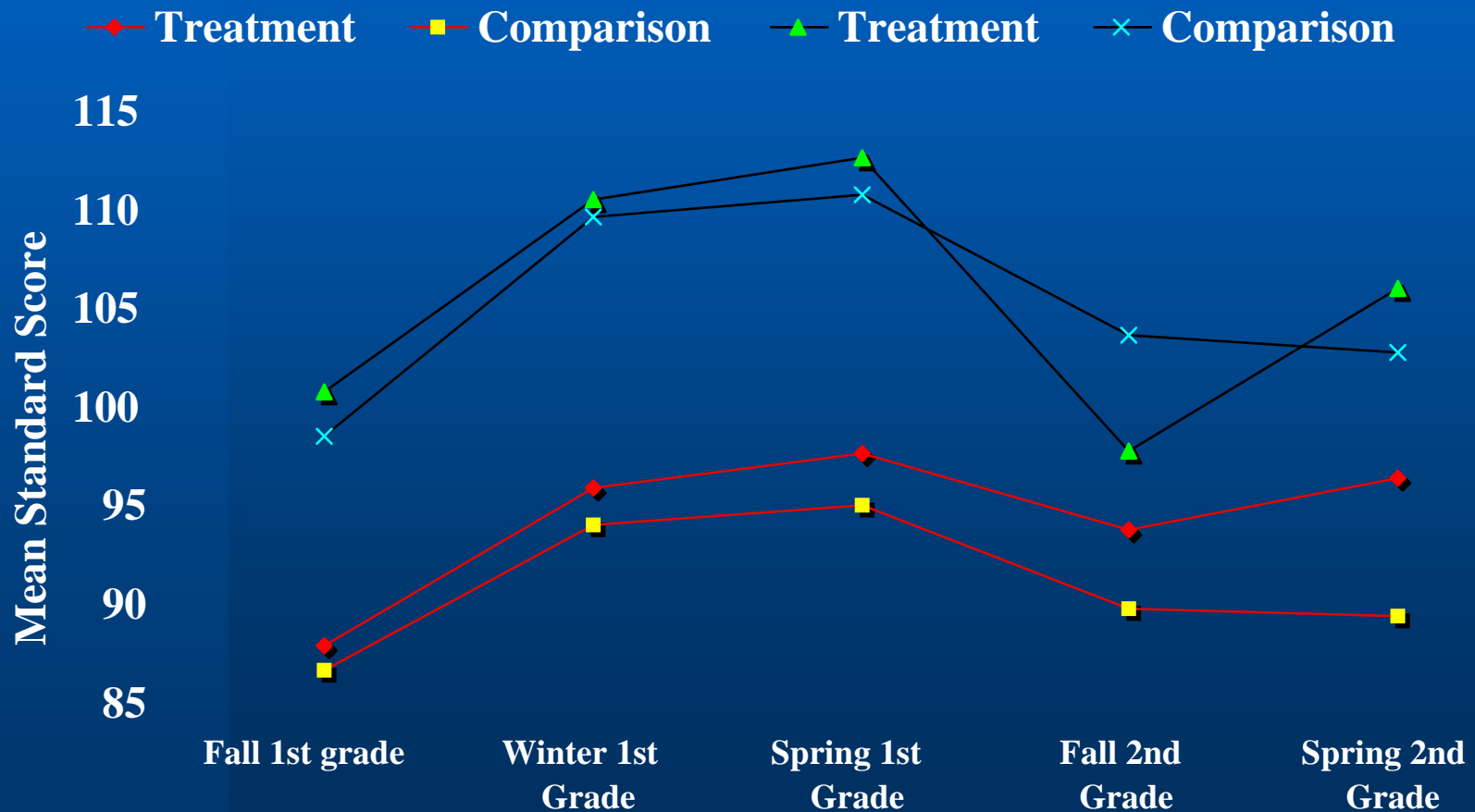|	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	87.93 (13.13)	95.86 (12.73)	97.64 (13.84)	93.71 (11.13)	93.71 (11.14)	96.43 (10.39)
Comparison	86.63 (12.51)	94.00 (13.97)	95.00 (14.52)	89.75 (12.98)	90.38 (9.43)	89.38 (9.81)

WRMT-Word Identification

WRMT-Word Identification

Treatment **Comparison**

Mean Standard Score

100

97.64

96.43

95.86

95

95

94

93.71 93.71

90.38

90

89.75

89.38

87.93

86.63

85

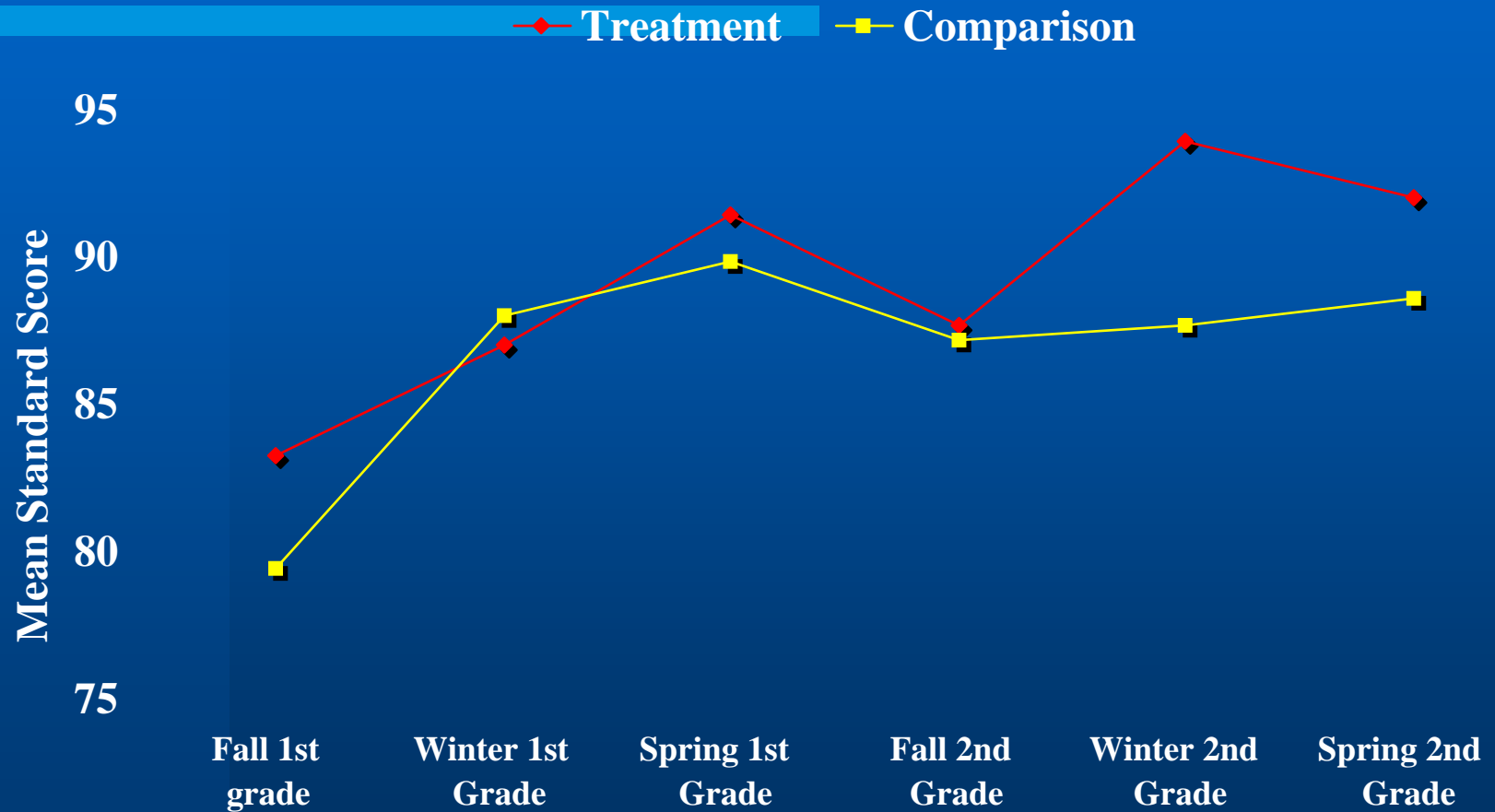| Fall 1st grade | Winter 1st Grade | Spring 1st Grade | Fall 2nd Grade | Winter 2nd Grade | Spring 2nd Grade |

WRMT-Word Identification

WRMT- Passage Comprehension

High Responders:

	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	91.69 (12.34)	101.97 (9.41)	104.91 (6.92)	96.71 (5.59)	NA	101.91 (6.44)
Comparison	89.71 (11.26)	98.08 (9.41)	102.53 (7.76)	98.45 (6.35)	NA	99.00 (6.54)

WRMT- Passage Comprehension
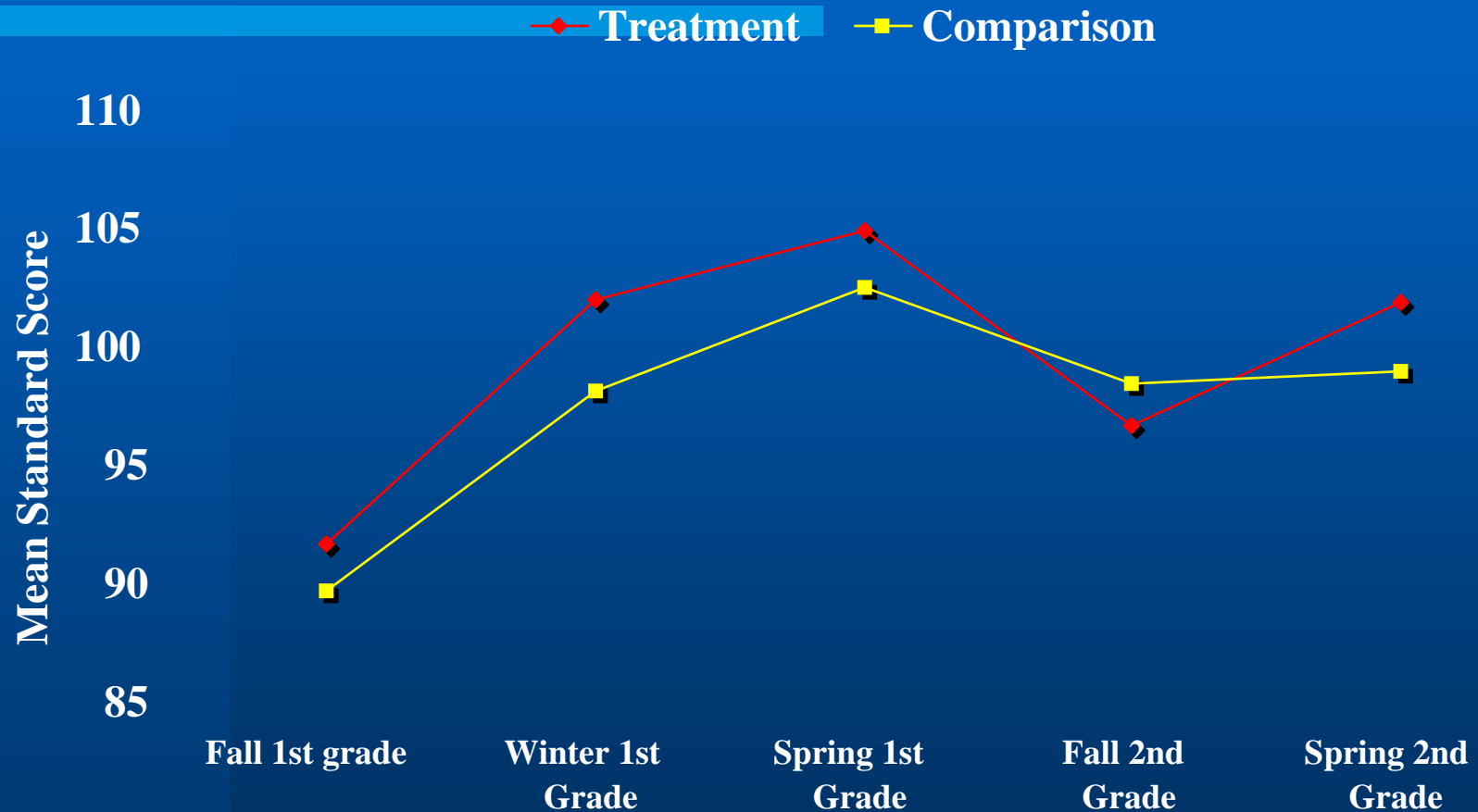
WRMT- Passage Comprehension
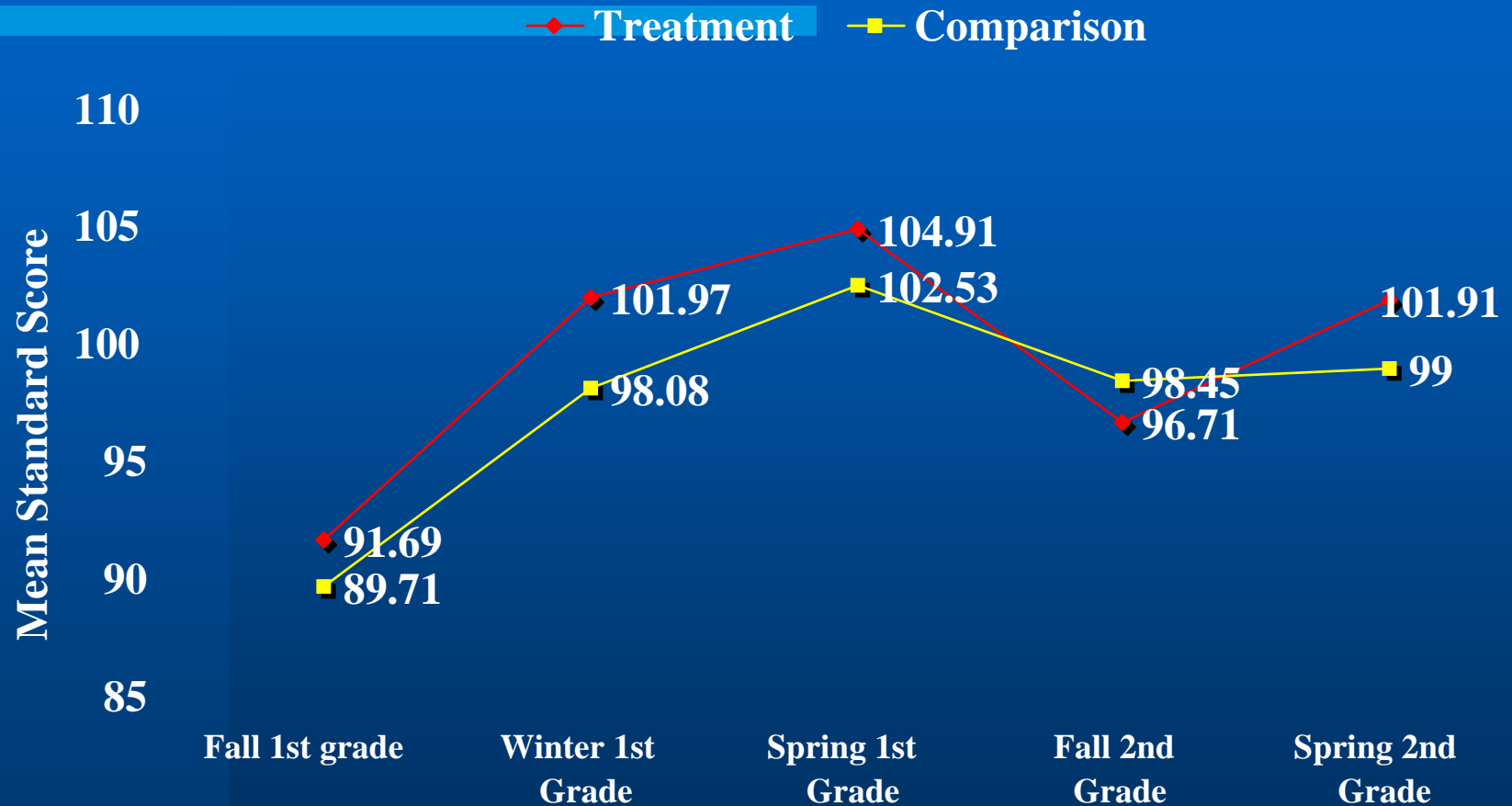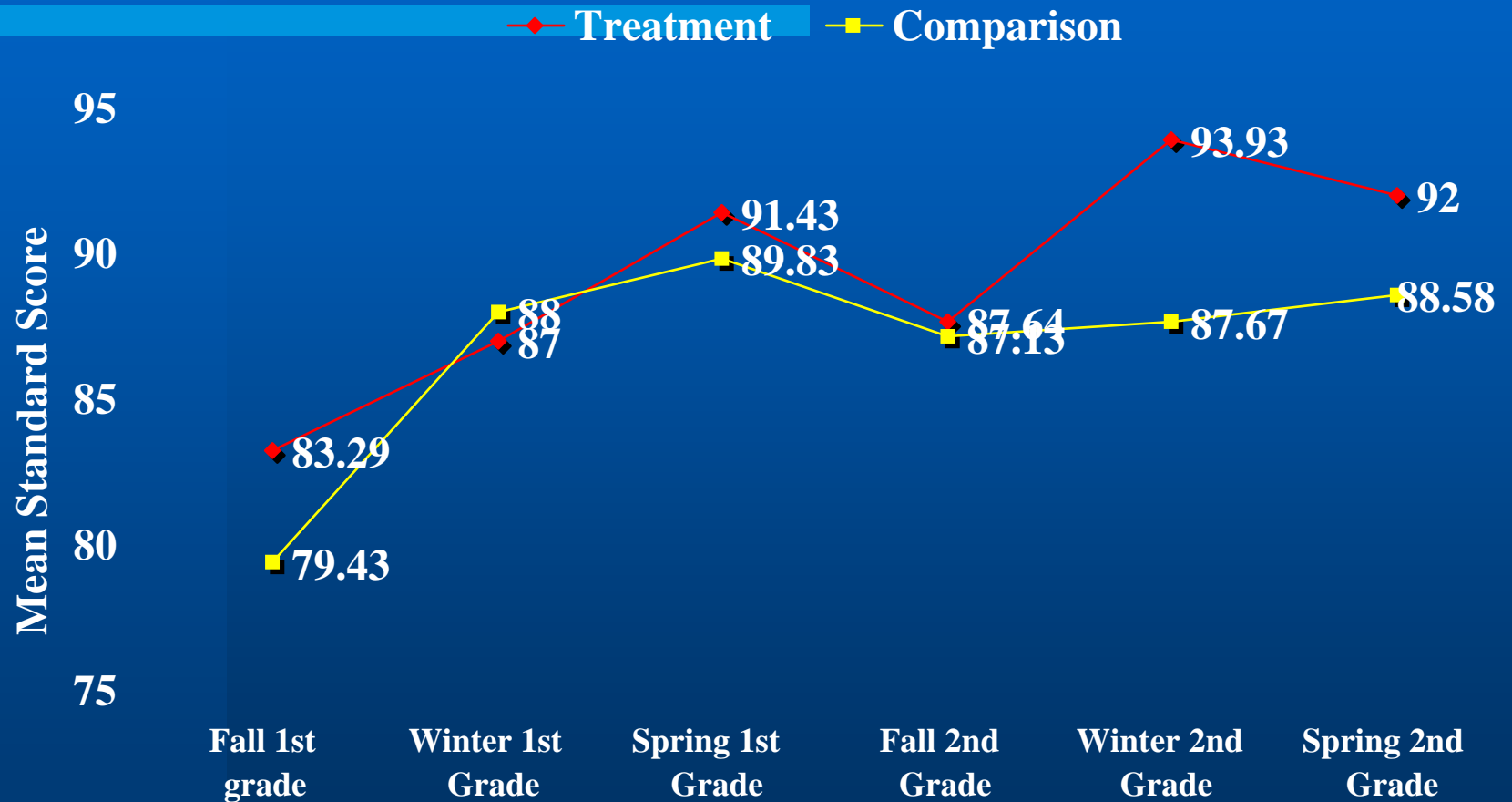
WRMT- Passage Comprehension

Low Responders:

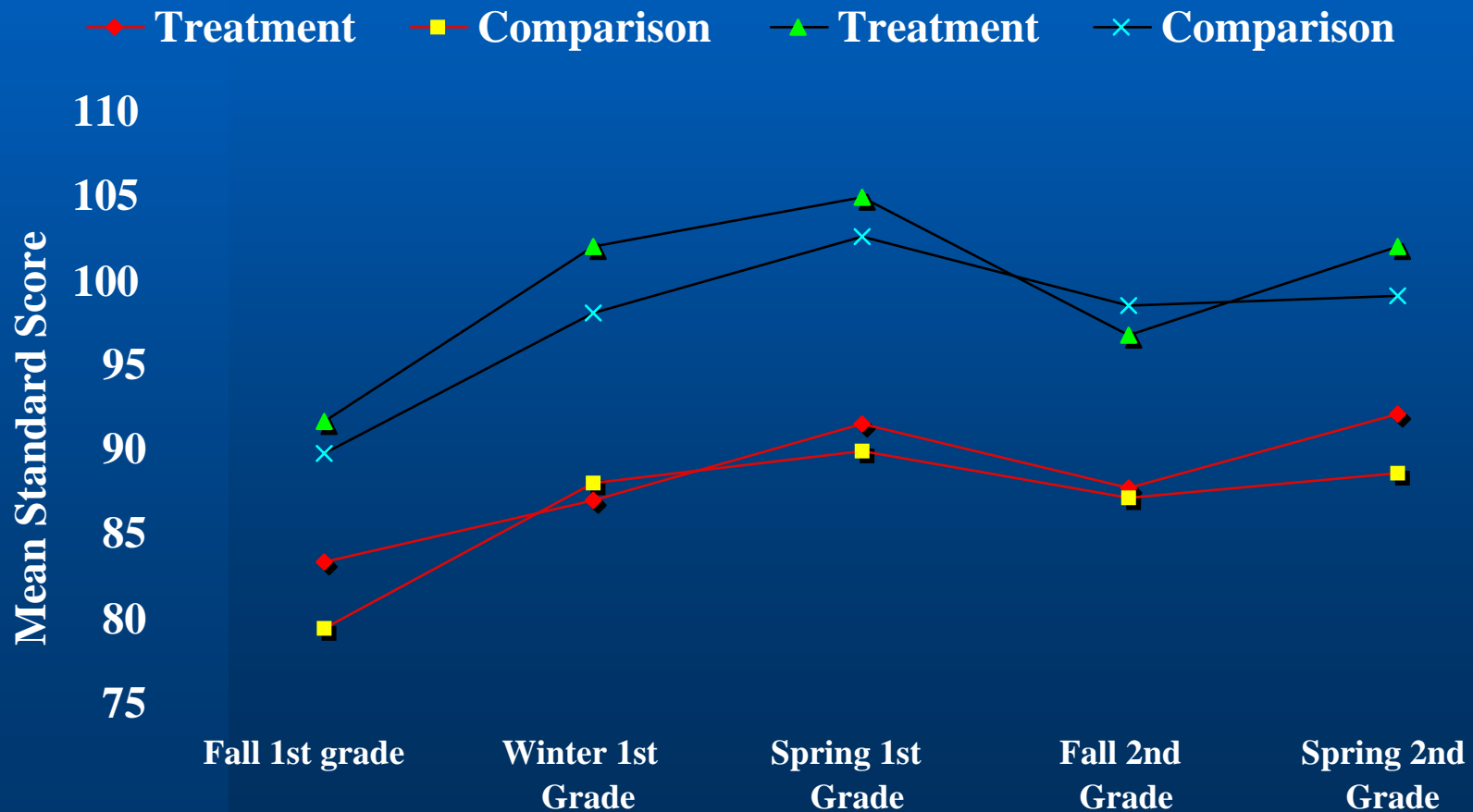|	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	83.29 (6.78)	87.00 (8.66)	91.43 (11.46)	87.64 (12.46)	93.93 (11.94)	92.00 (11.91)
Comparison	79.43 (8.36)	88.00 (10.54)	89.83 (9.68)	87.13 (8.43)	87.67 (12.46)	88.58 (9.90)

WRMT- Passage Comprehension

Legend: Treatment · Comparison

Y-axis: Mean Standard Score (75, 80, 85, 90, 95)

X-axis: Fall 1st grade, Winter 1st Grade, Spring 1st Grade, Fall 2nd Grade, Winter 2nd Grade, Spring 2nd Grade

WRMT- Passage Comprehension

WRMT- Passage Comprehension

Low and High Responders:

Legend: ◆ Treatment   ■ Comparison   ▲ Treatment   ✕ Comparison

Y-axis: Mean Standard Score (75, 80, 85, 90, 95, 100, 105, 110)

X-axis: Fall 1st grade, Winter 1st Grade, Spring 1st Grade, Fall 2nd Grade, Spring 2nd Grade

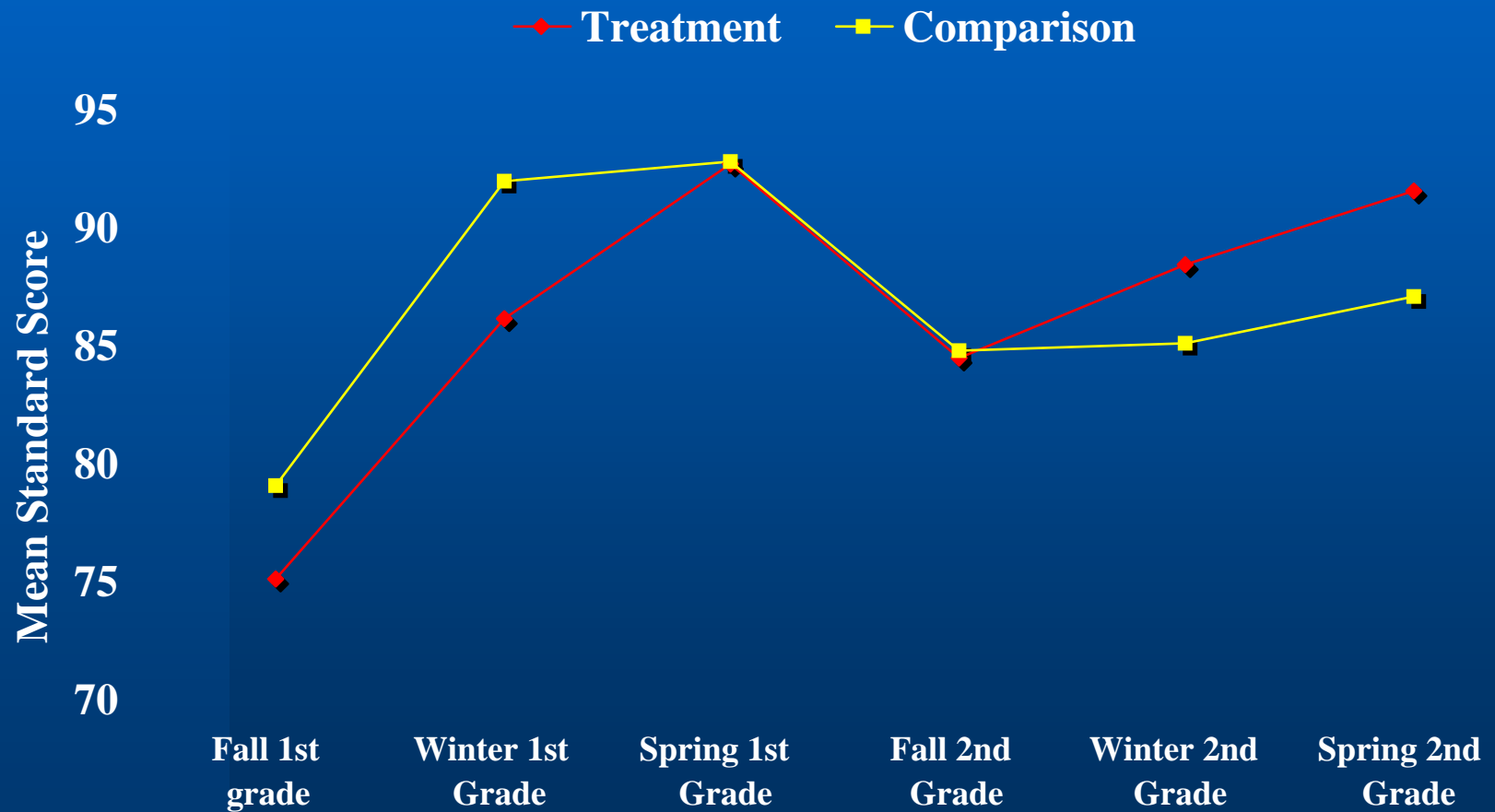# WRAT- Spelling

High Responders:

	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	95.21 (9.85)	102.74 (13.70)	107.44 (10.89)	92.14 (4.41)	NA	NA
Comparison	91.32 (11.56)	100.19 (11.66)	105.31 (10.33)	93.45 (7.51)	NA	NA

WRAT- Spelling

WRAT- Spelling

Legend: Treatment, Comparison

Mean Standard Score (y-axis): 90, 95, 100, 105, 110

Data points:
- Fall 1st grade: Treatment 95.21, Comparison 91.32
- Winter 1st Grade: Treatment 102.74, Comparison 100.19
- Spring 1st Grade: Treatment 107.44, Comparison 105.31
- Fall 2nd Grade: Treatment 92.14, Comparison 93.45
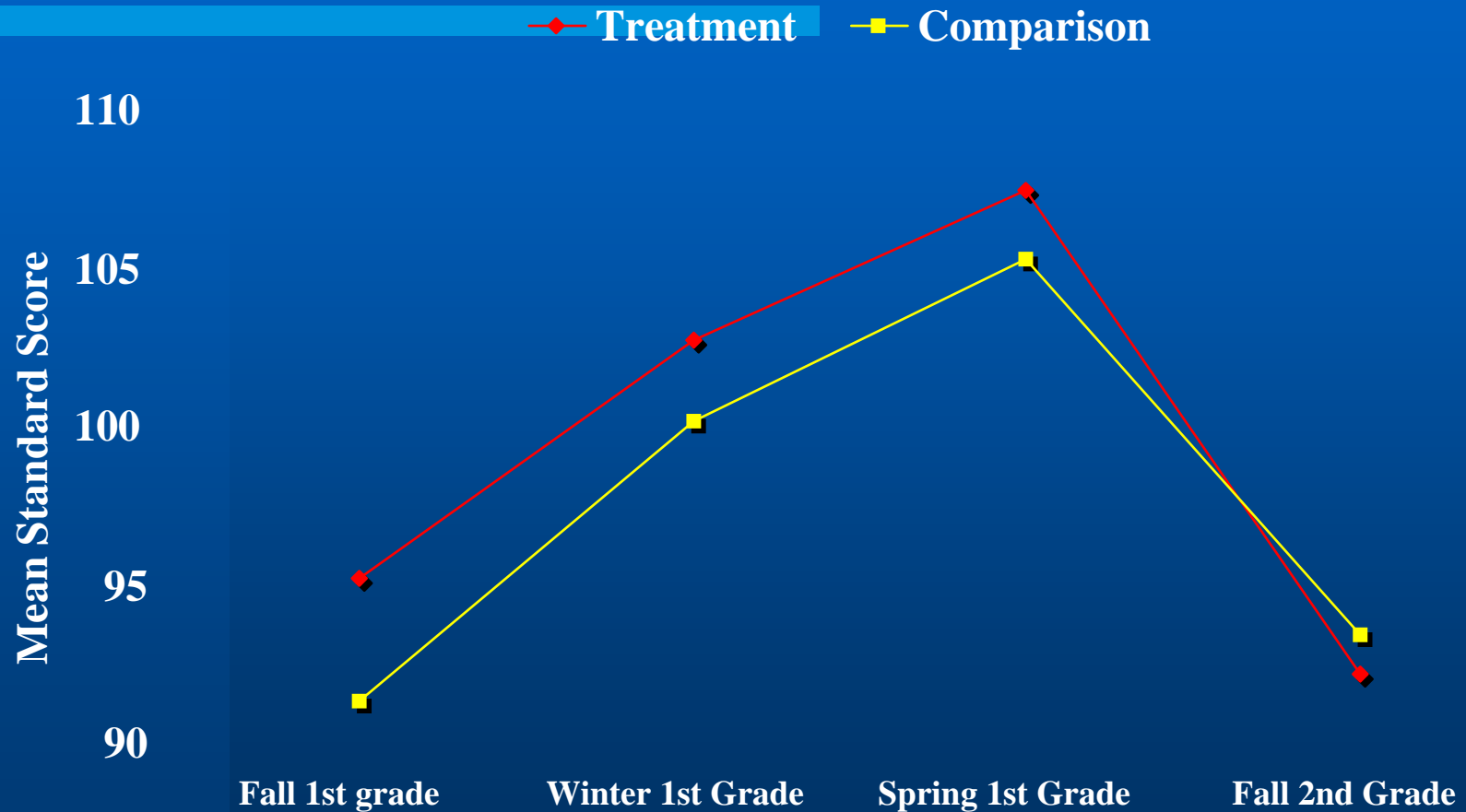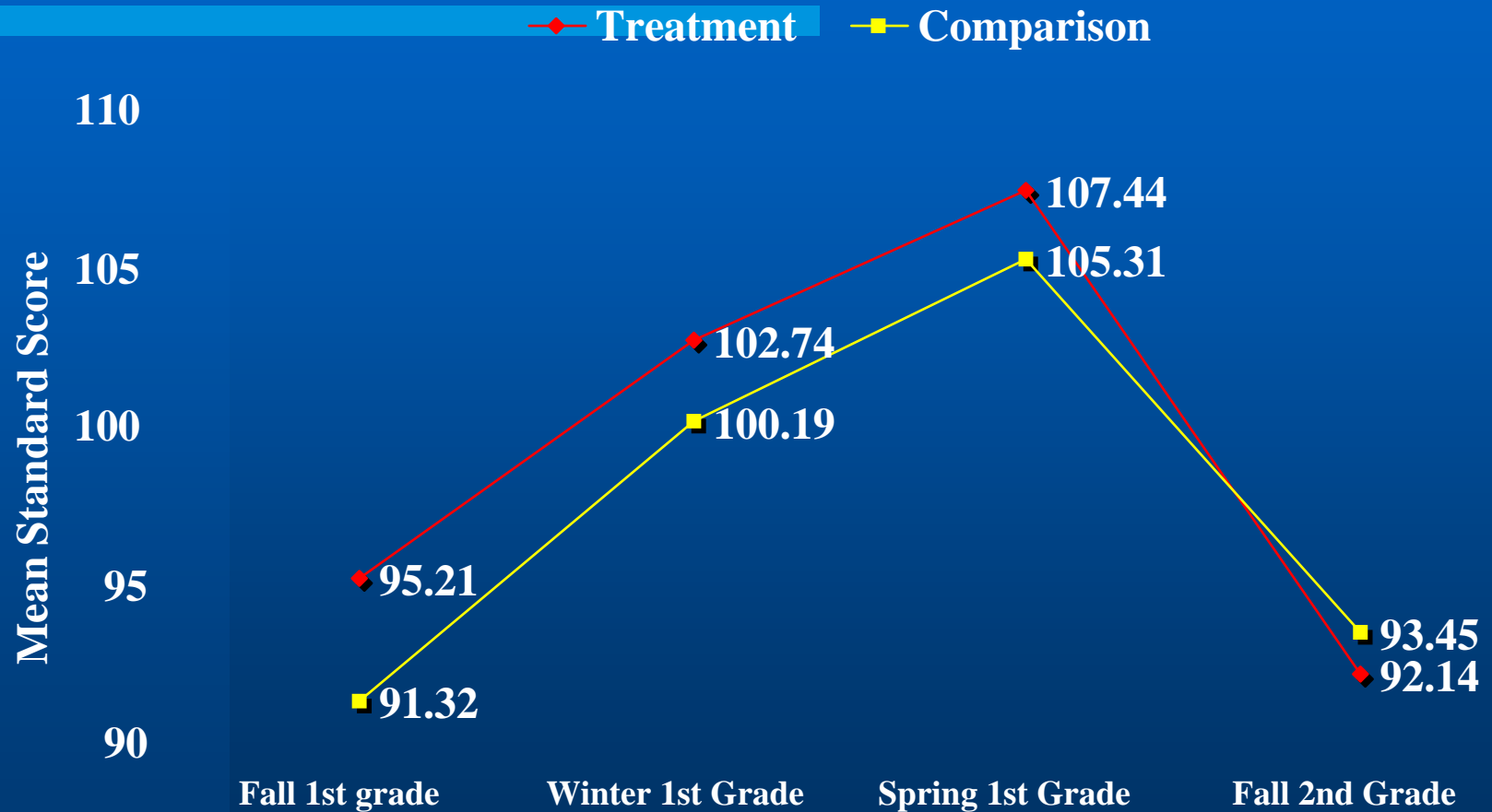
WRAT- Spelling

Low Responders:

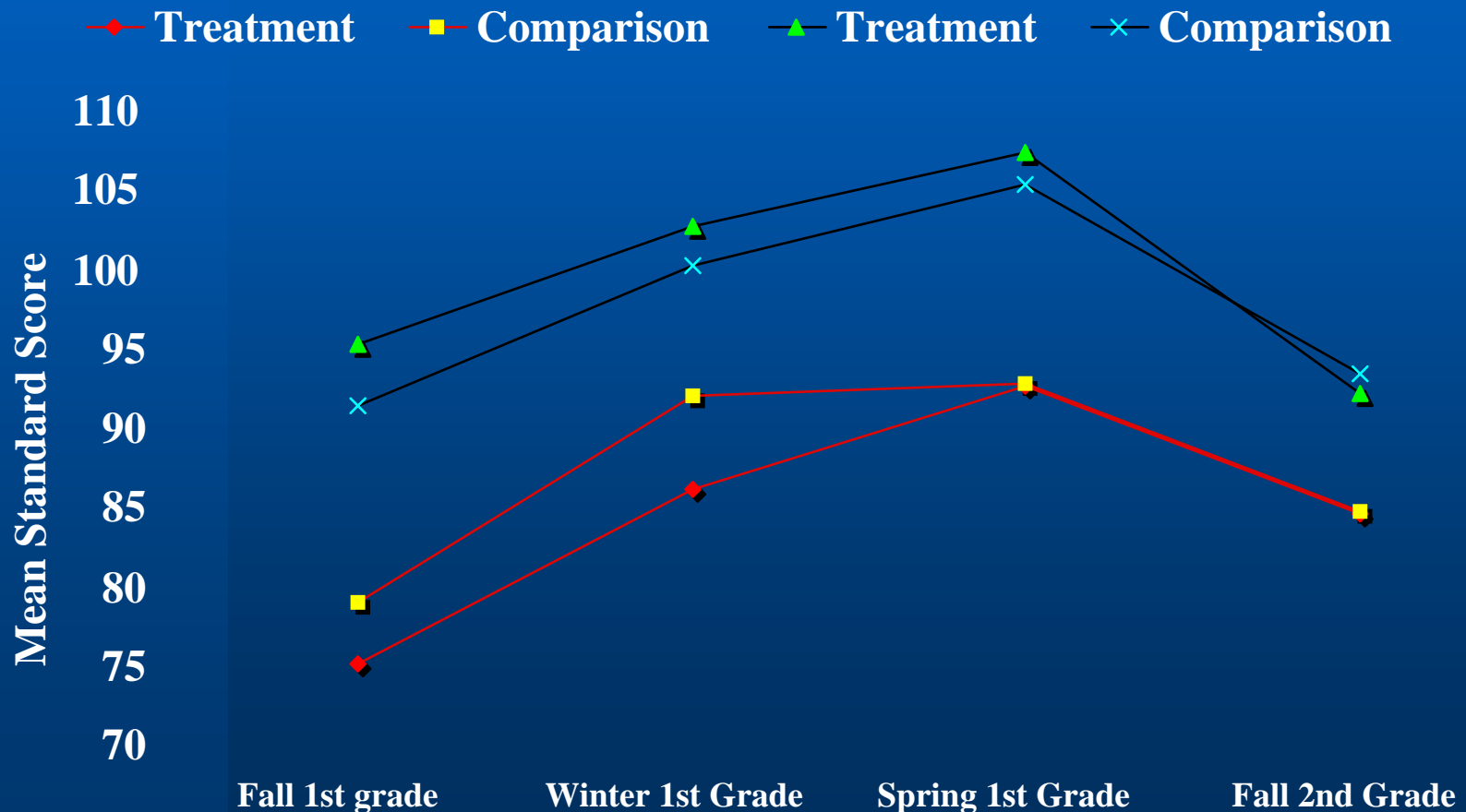|	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	75.07 (18.21)	86.14 (15.50)	92.71 (9.32)	84.50 (10.35)	88.43 (12.28)	91.57 (7.88)
Comparison	79.04 (17.05)	91.96 (13.18)	92.83 (12.50)	84.79 (10.86)	85.13 (13.08)	87.08 (10.26)

WRAT- Spelling

WRAT- Spelling

Chart legend: ◆— Treatment ■— Comparison

Y-axis (Mean Standard Score): 70, 75, 80, 85, 90, 95

X-axis: Fall 1st grade, Winter 1st Grade, Spring 1st Grade, Fall 2nd Grade, Winter 2nd Grade, Spring 2nd Grade

Data labels:
- 75.07
- 79.04
- 86.14
- 91.96
- 92.81
- 84.79
- 84.5
- 88.43
- 85.13
- 91.57
- 87.08
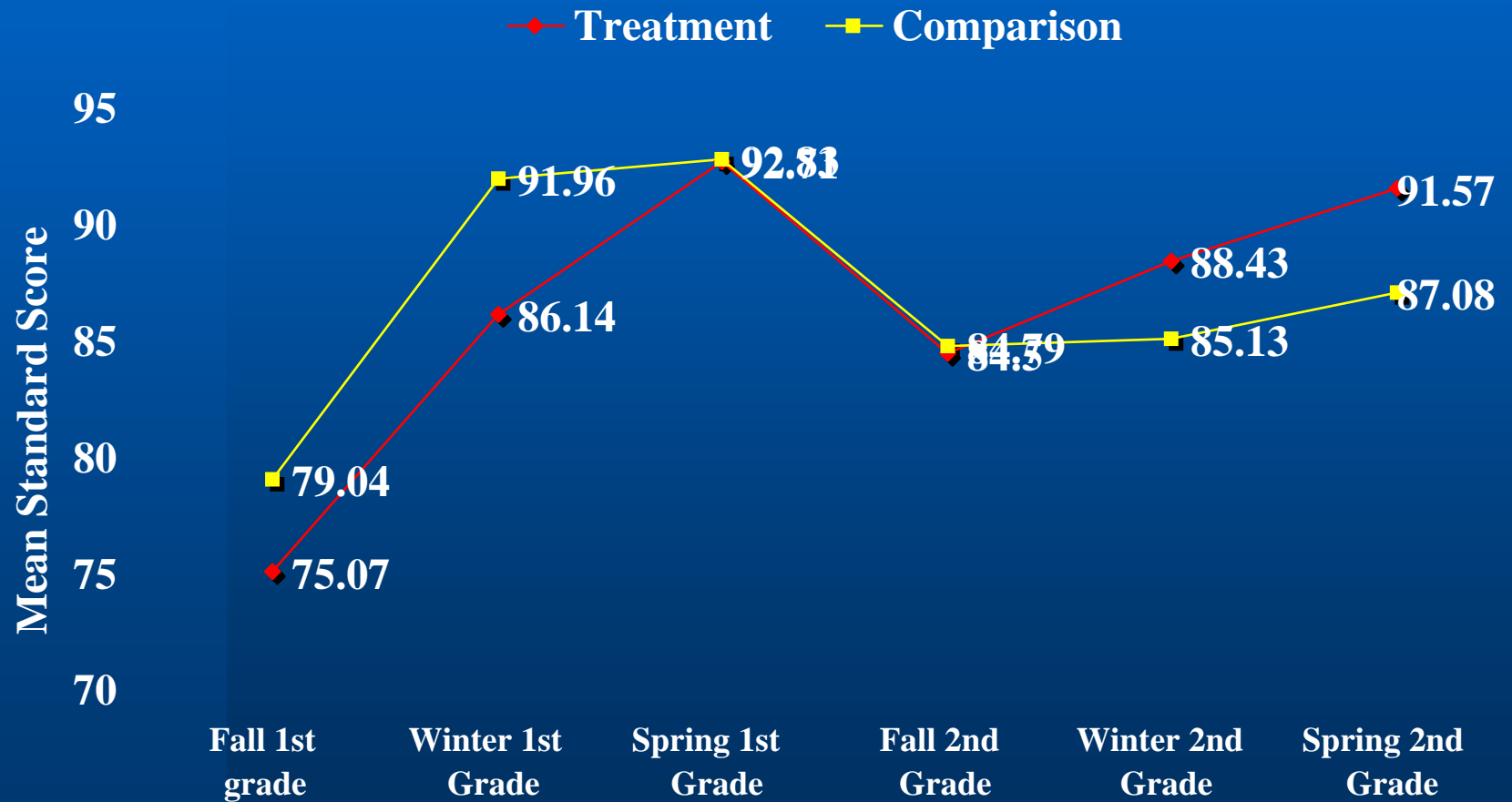
WRAT- Spelling

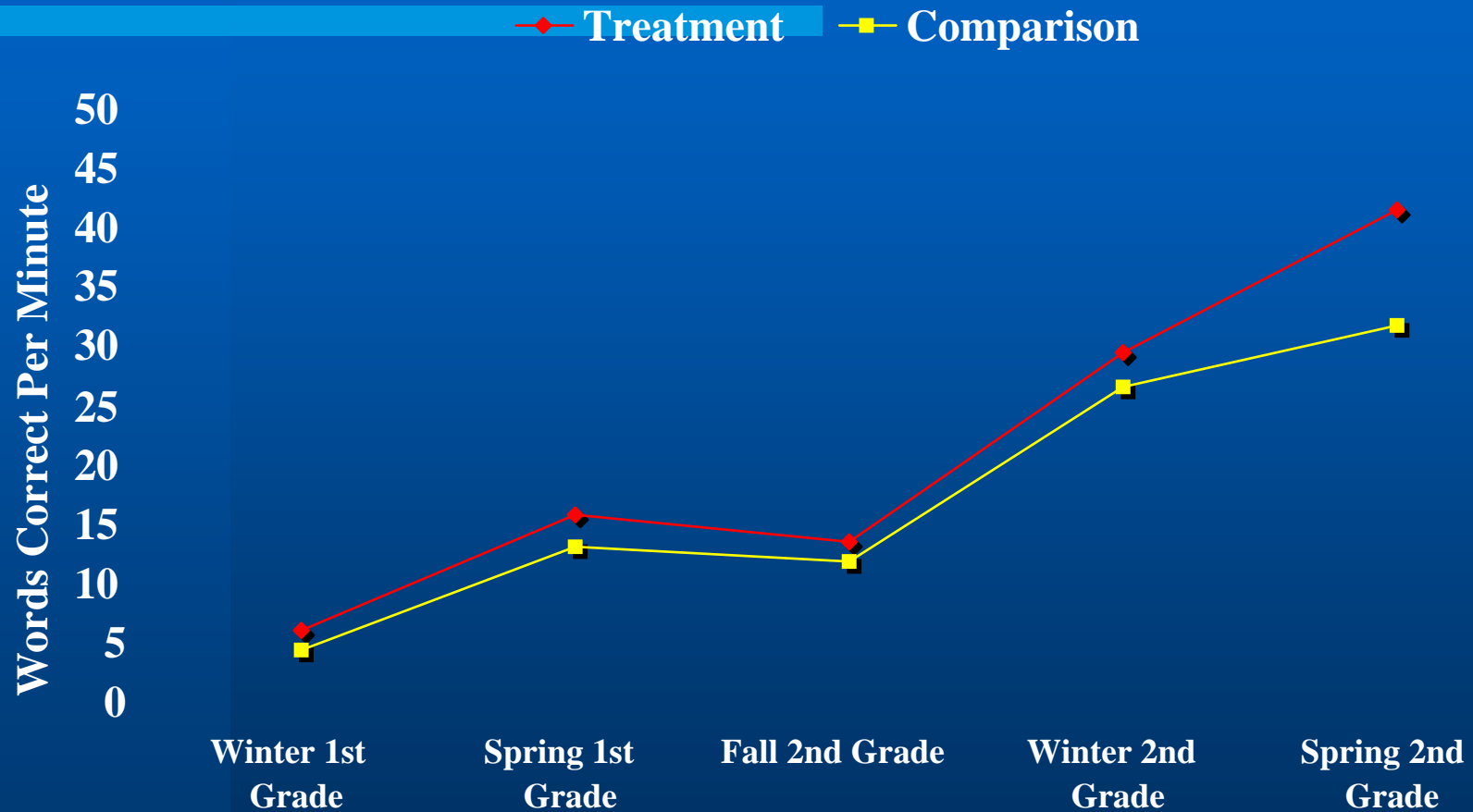## Low and High Responders:

Oral Reading Fluency

High Responders:

	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	NA	16.26 (8.69)	42.29 (17.15)	42.15 (14.16)	70.18 (20.11)	82.12 (24.17)
Comparison	NA	13.00 (6.85)	34.19 (15.14)	34.89 (9.88)	62.39 (19.37)	75.77 (17.51)

Oral Reading Fluency
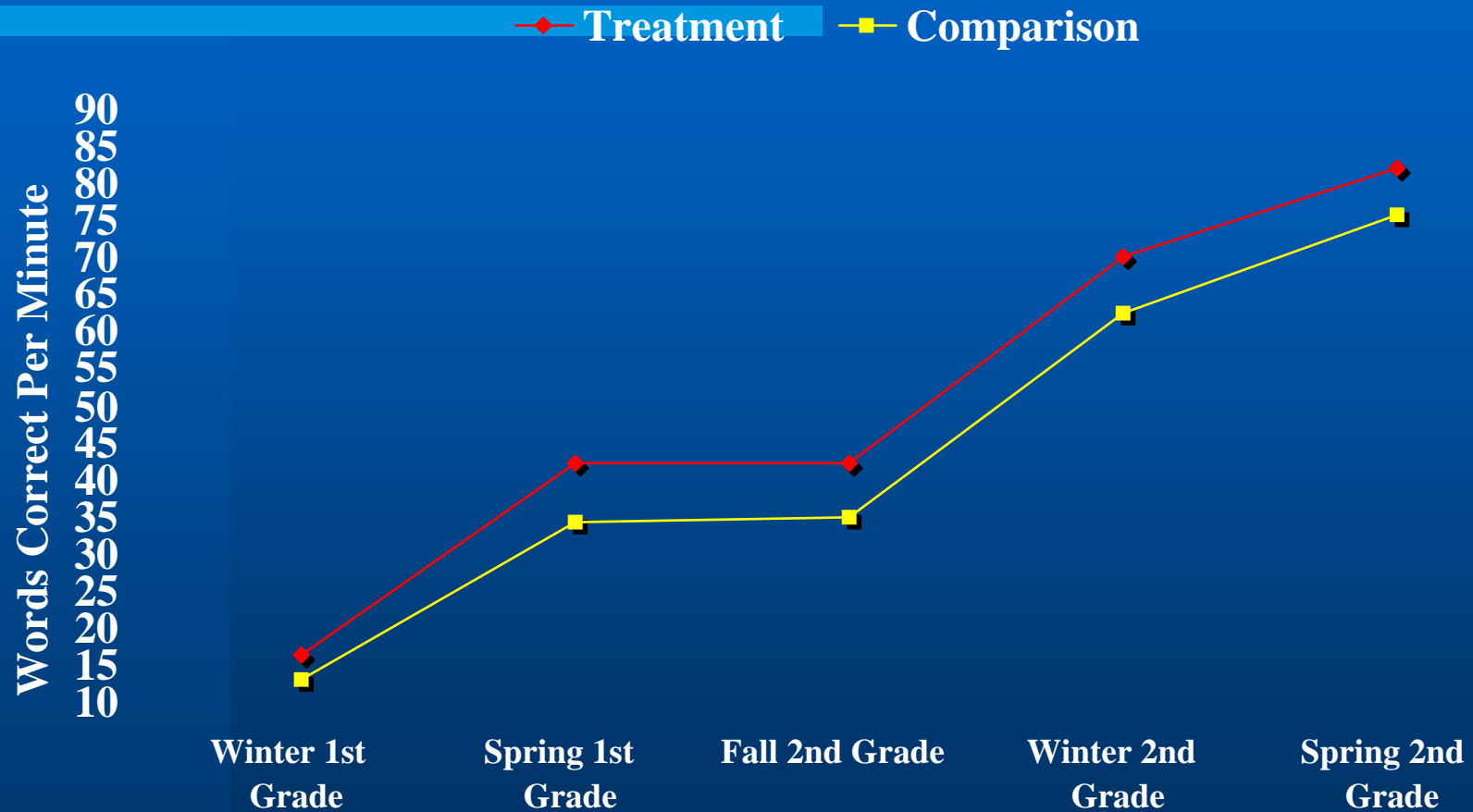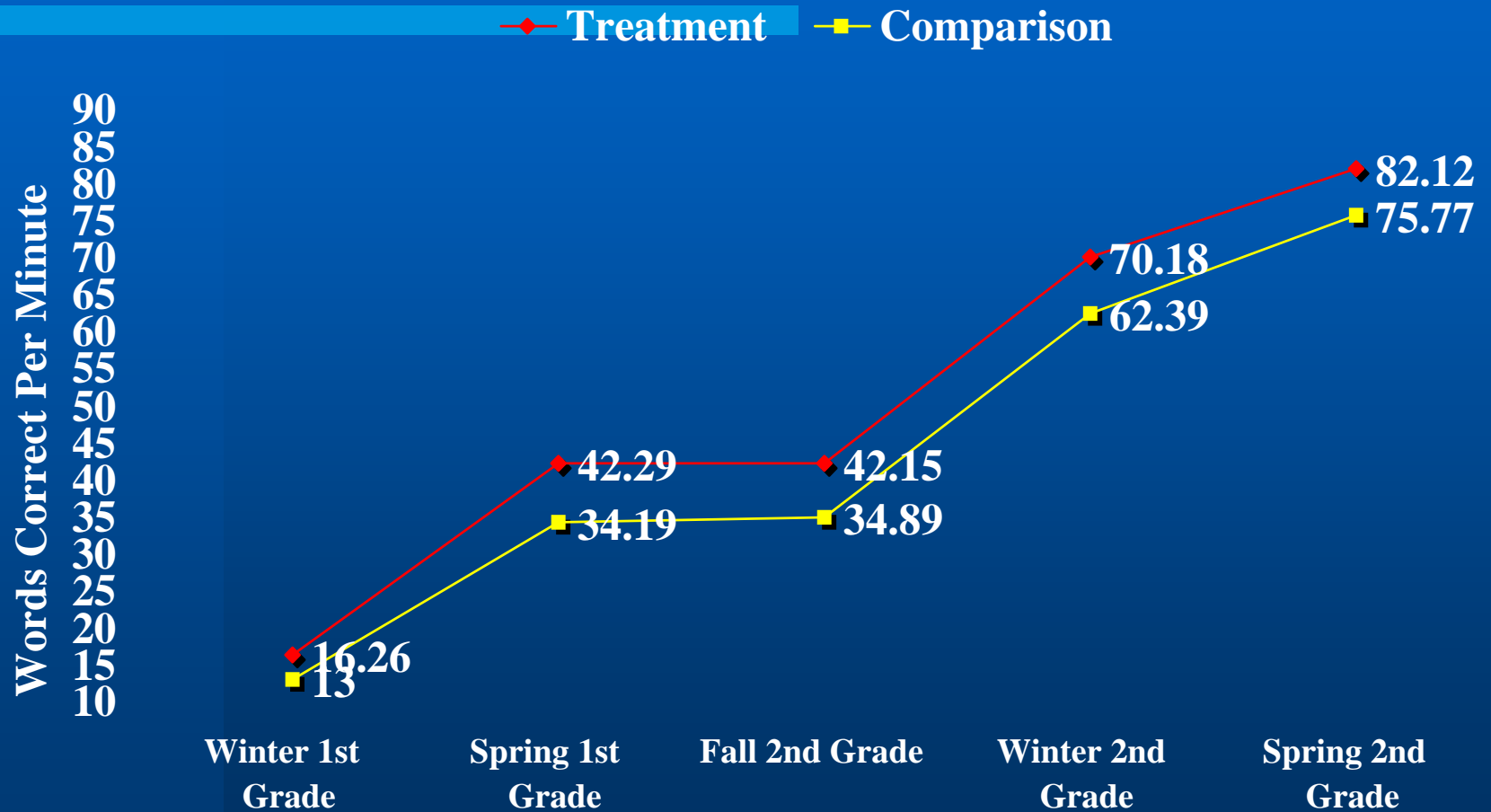
Oral Reading Fluency

Low Responders:

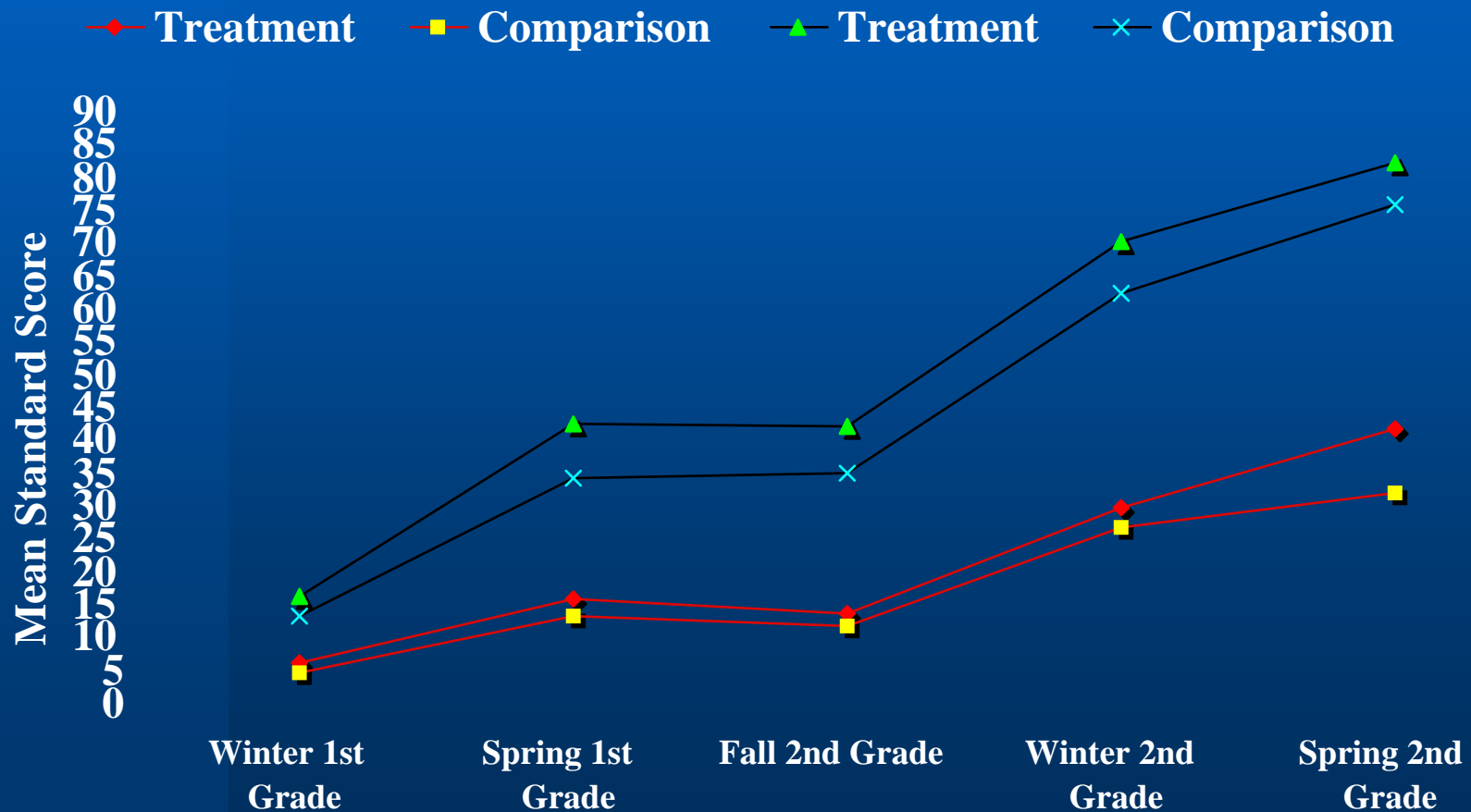|	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	NA	6.07 (4.67)	15.86 (7.80)	13.43 (8.84)	29.50 (13.51)	41.57 (20.97)
Comparison	NA	4.46 (2.83)	13.17 (6.22)	11.75 (7.59)	26.54 (15.37)	31.79 (19.72)

Oral Reading Fluency

Oral Reading Fluency
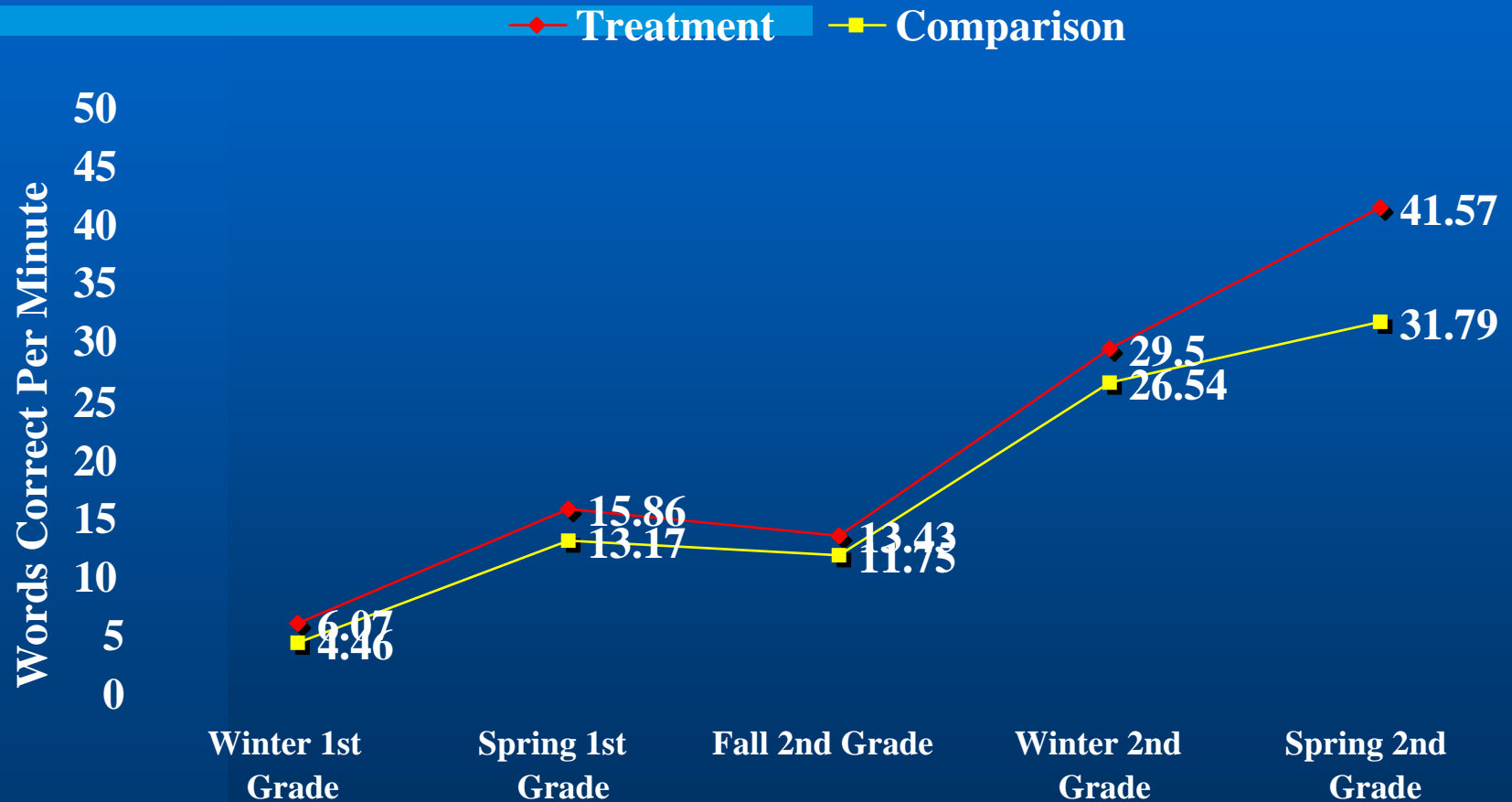
Oral Reading Fluency

Low and High Responders:

Growth Modeling Passages

High Responders:

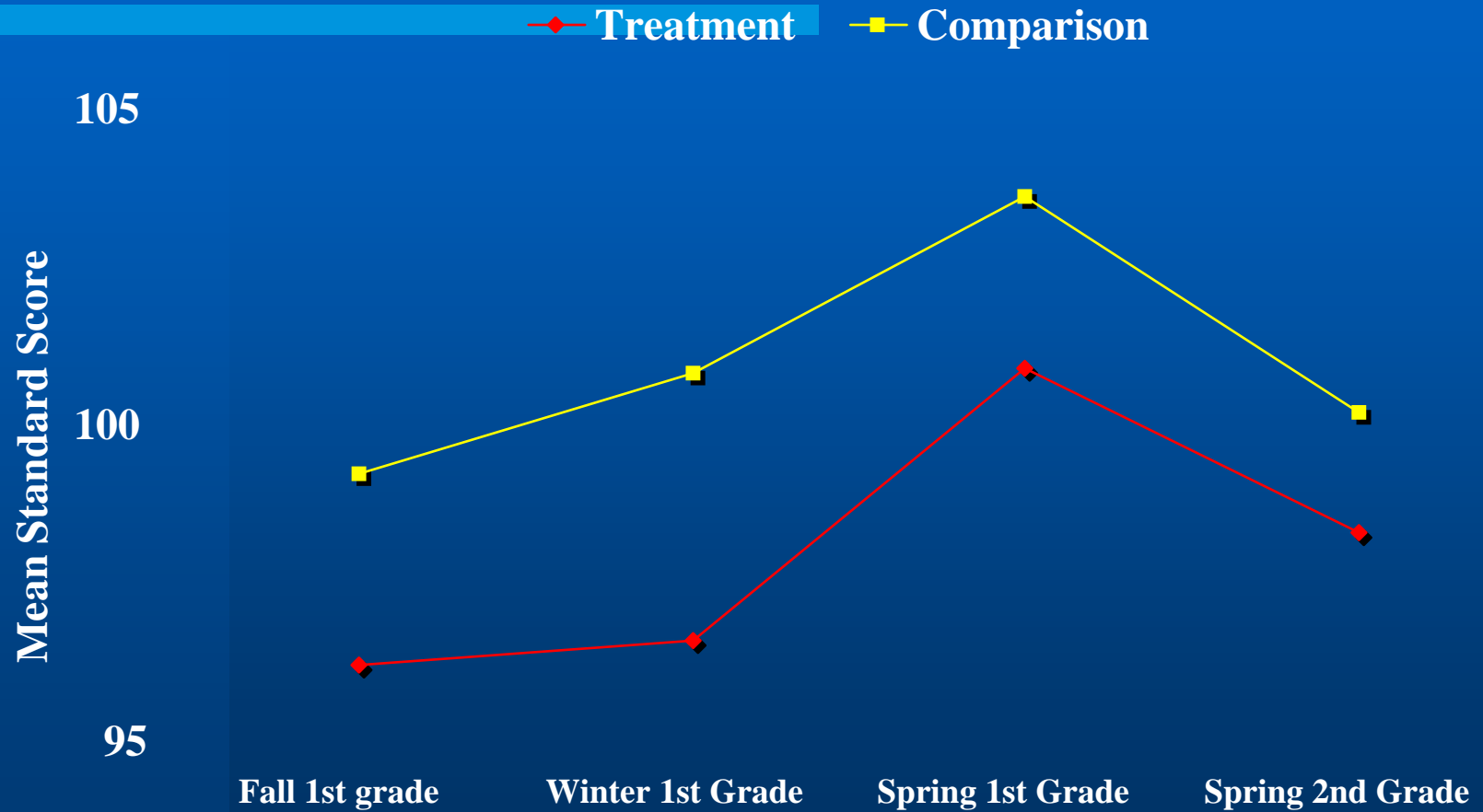|	Spring 1st Grade		Spring 2nd Grade	
	1st Passage	2nd Passage	1st Passage	2nd Passage
Treatment	42.09 (13.52)	44.71 (12.92)	85.21 (24.45)	84.59 (24.89)
Comparison	32.77 (11.78)	34.77 (12.39)	74.93 (12.95)	73.14 (12.09)

Note: Growth modeling passages were the ORF passages developed by Fuchs. Two passages administered at end of 1st, 2nd, and 3rd grades all on 1st grade level

Growth Modeling Passages
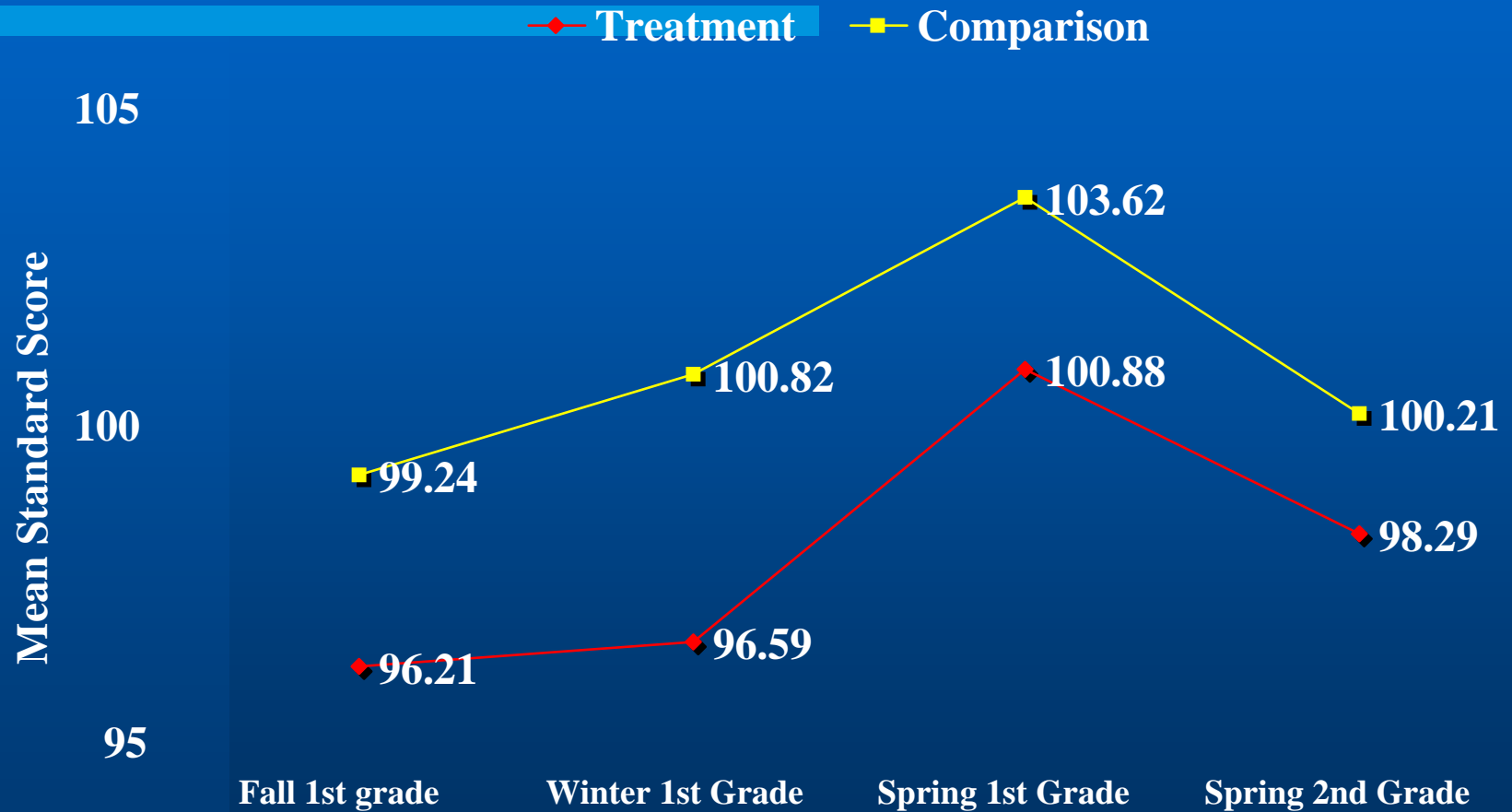
Low Responders:

	Spring 1st Grade		Spring 2nd Grade	
	1st Passage	2nd Passage	1st Passage	2nd Passage
Treatment	18.57 (12.57)	17.00 (12.31)	49.14 (20.78)	46.07 (17.66)
Comparison	15.21 (8.87)	13.79 (9.13)	35.82 (19.66)	35.71 (19.10)

Note: Growth modeling passages were the ORF passages developed by Fuchs. Two passages administered at end of 1st, 2nd, and 3rd grades all on 1st grade level
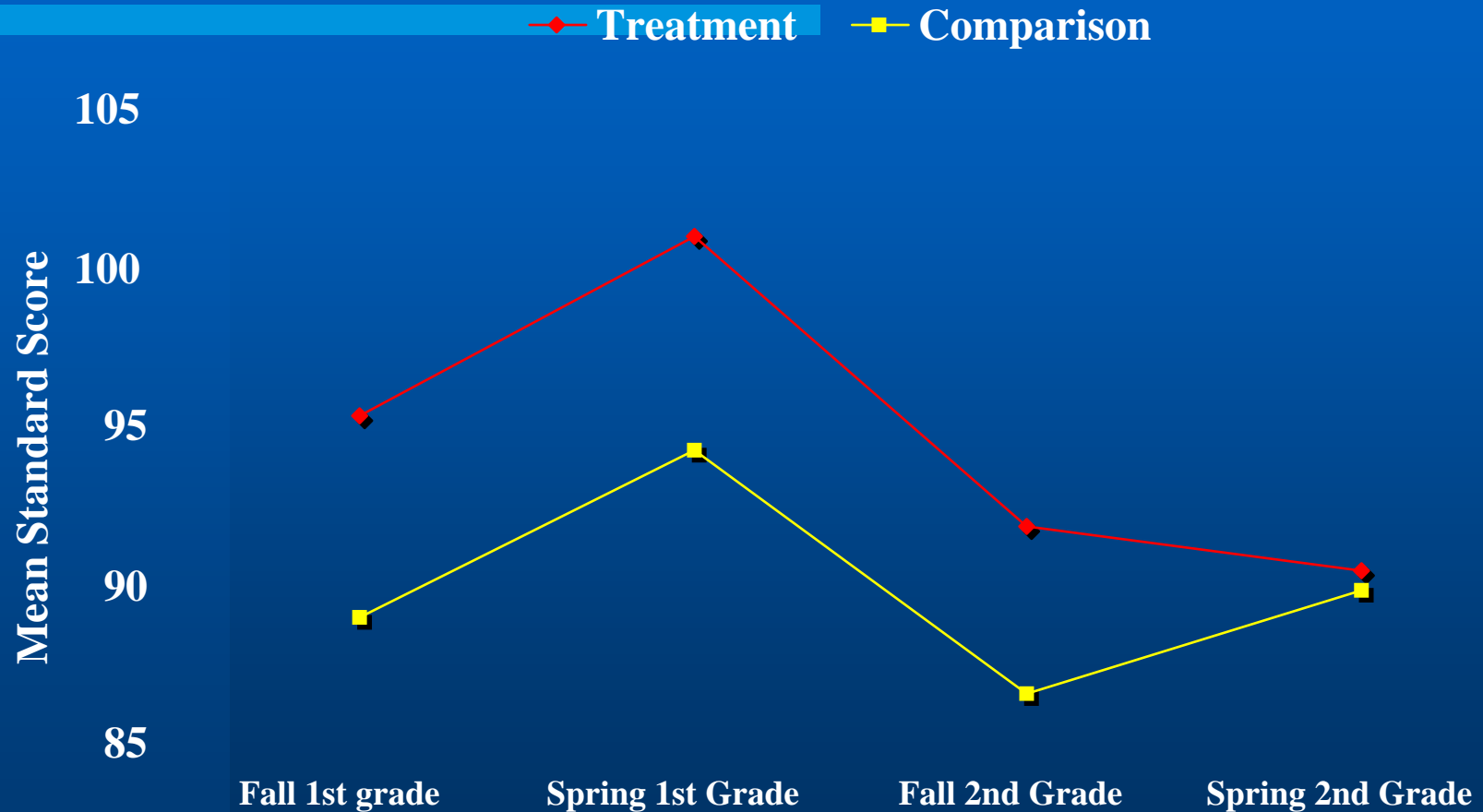
Social Skills Subscale

High Responders:

	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	96.21 (14.30)	96.59 (15.29)	100.88 (14.95)	NA	NA	98.29 (19.63)
Comparison	99.24 (14.32)	100.82 (18.38)	103.62 (17.47)	NA	NA	100.21 (13.33)

Social Skills Subscale

Social Skills Subscale
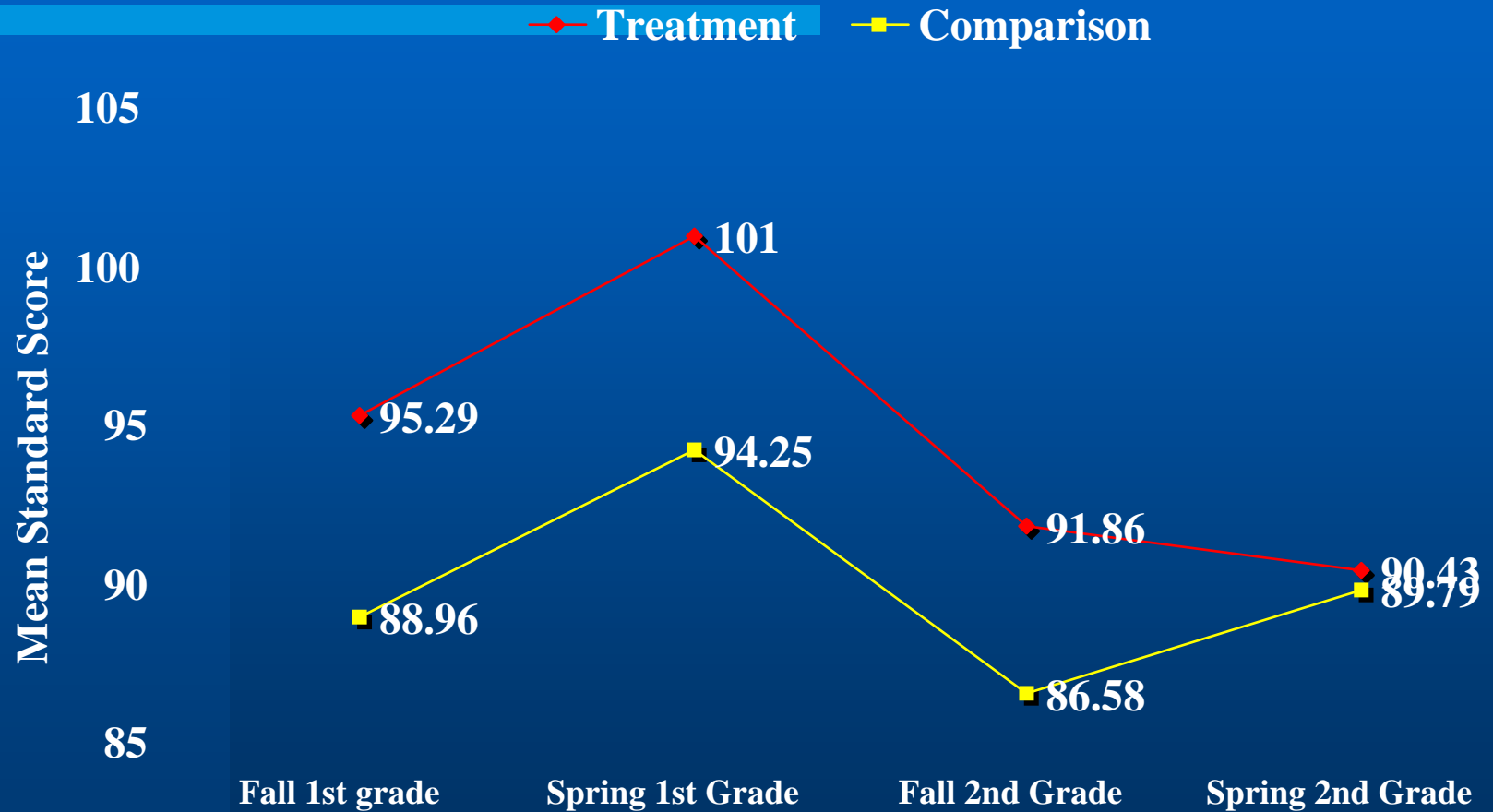
Social Skills Subscale

Low Responders:

	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	95.29 (14.14)	NA	101.00 (22.38)	91.86 (11.37)	NA	90.43 (16.93)
Comparison	88.96 (17.76)	NA	94.25 (20.28)	86.58 (14.41)	NA	89.79 (13.73)

Social Skills Subscale

Social Skills Subscale

Social Skills Subscale

Subscale sample items include:

- **Responds appropriately to peer pressure**
- **Follows your directions**
- **Volunteers to help peers with classroom tasks**
- **Controls temper in conflict situations with adults**
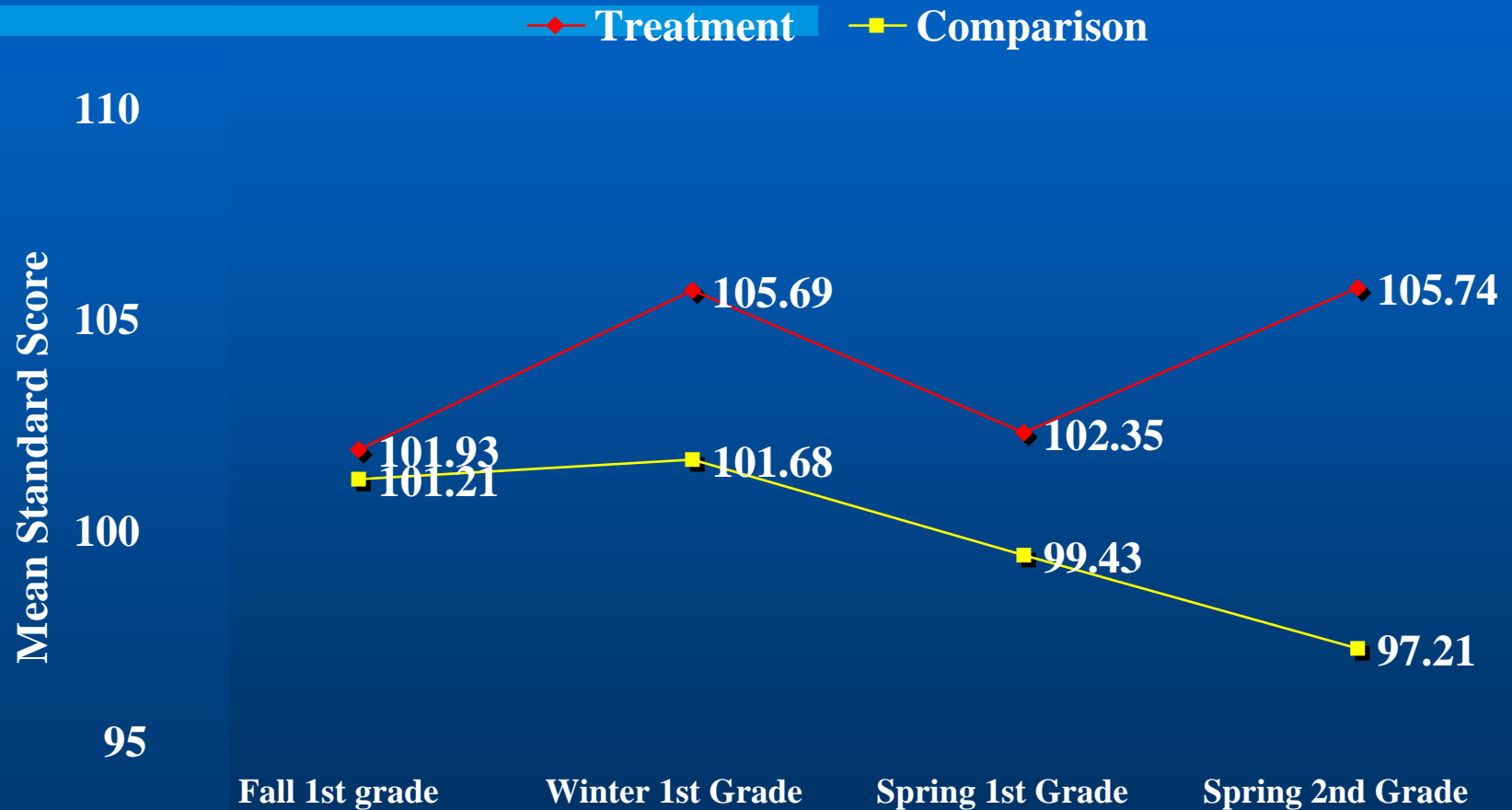
Problem Behavior Subscale

High Responders:

	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	101.93 (14.33)	105.69 (15.27)	102.35 (15.56)	NA	NA	105.74 (14.86)
Comparison	101.21 (12.88)	101.68 (14.25)	99.43 (16.05)	NA	NA	97.21 (10.32)

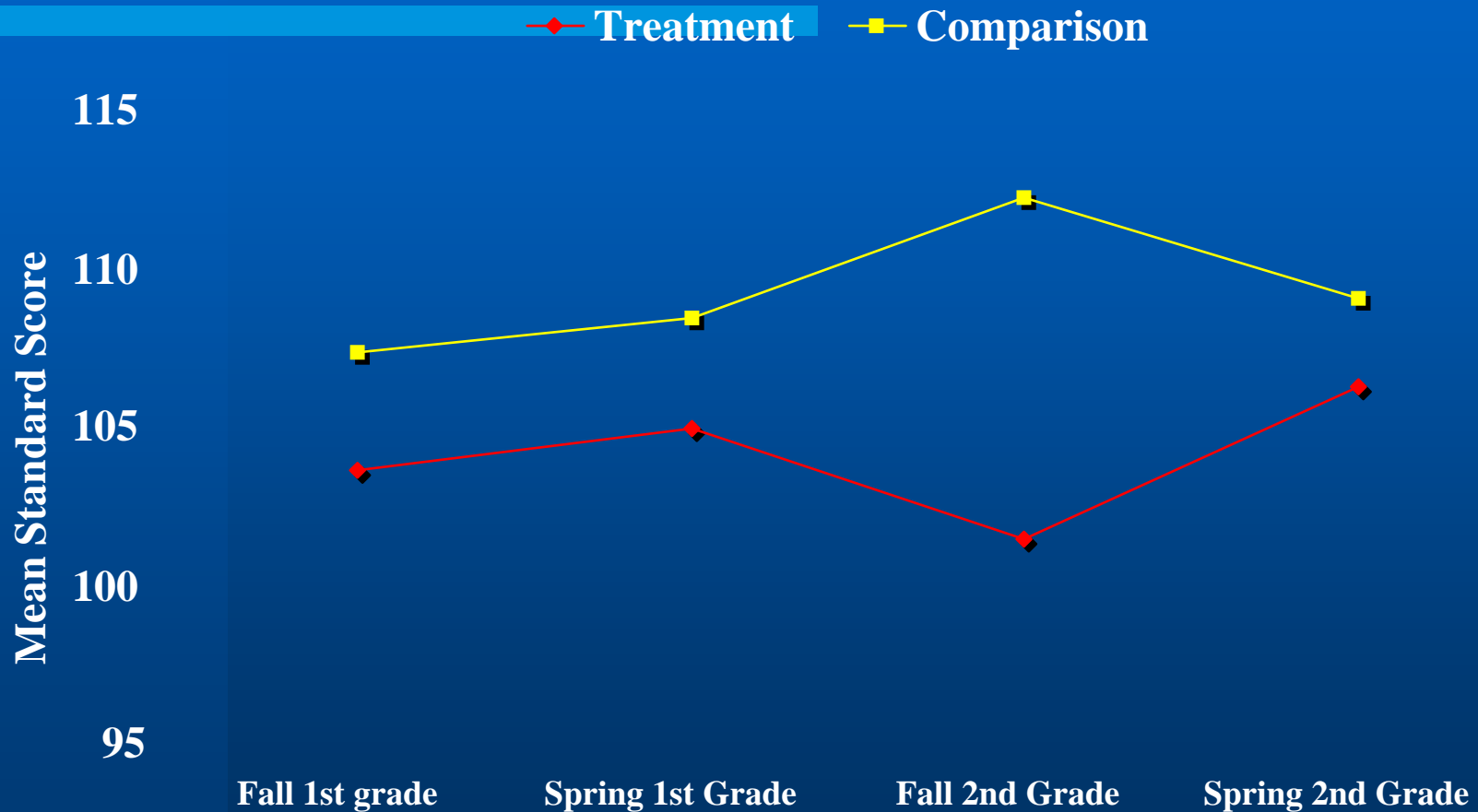# Problem Behavior Subscale
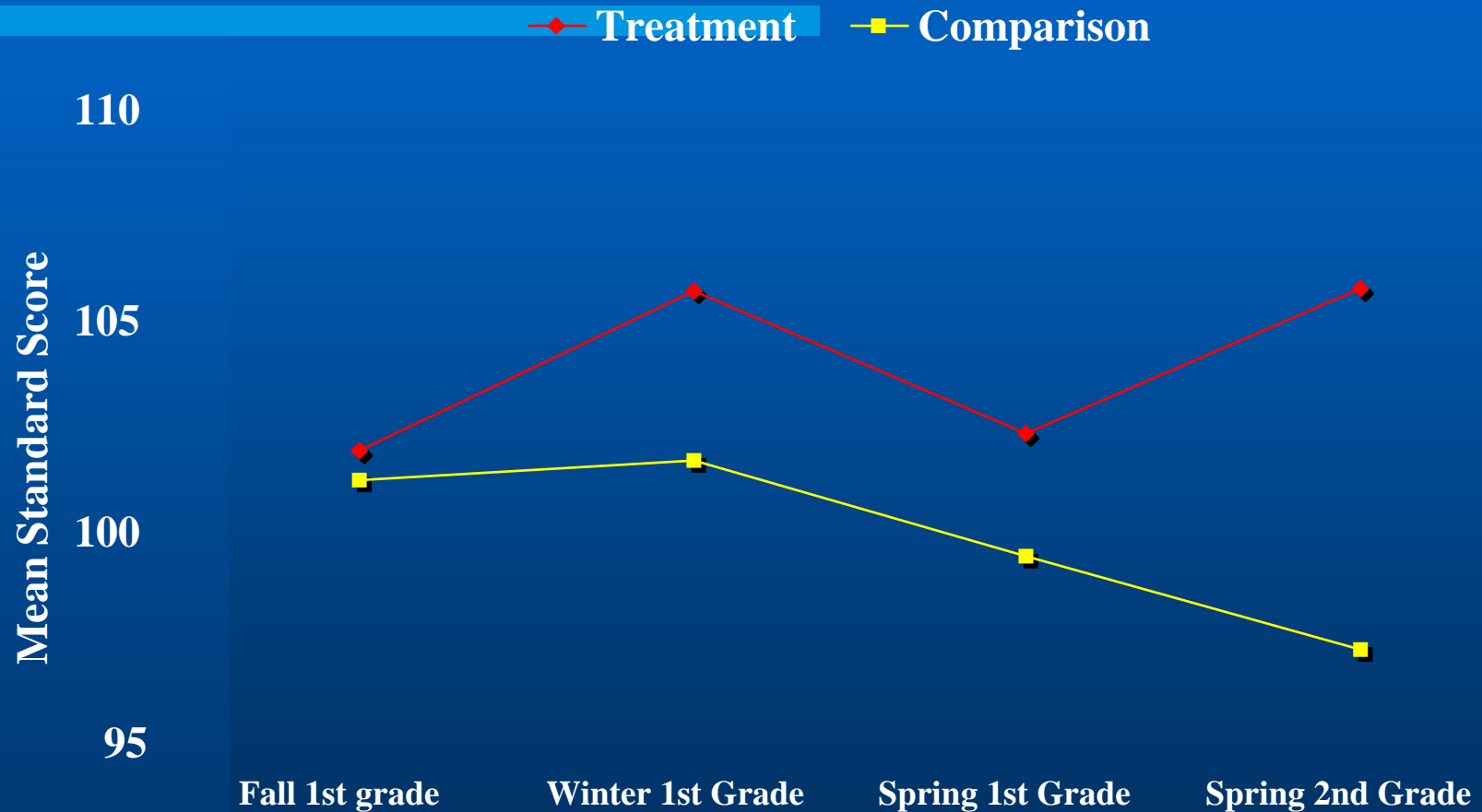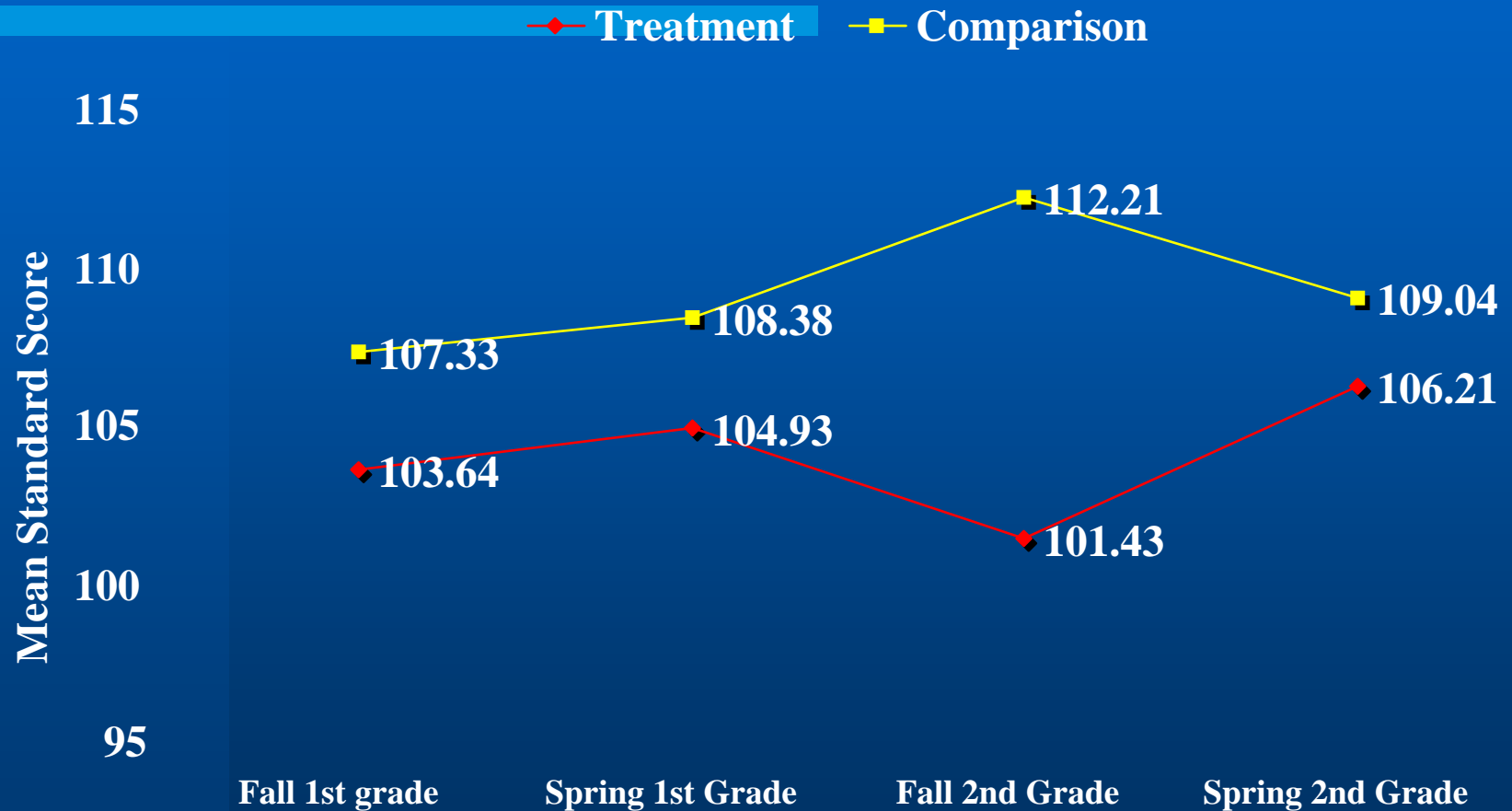
Problem Behavior Subscale

Problem Behavior Subscale

Low Responders:

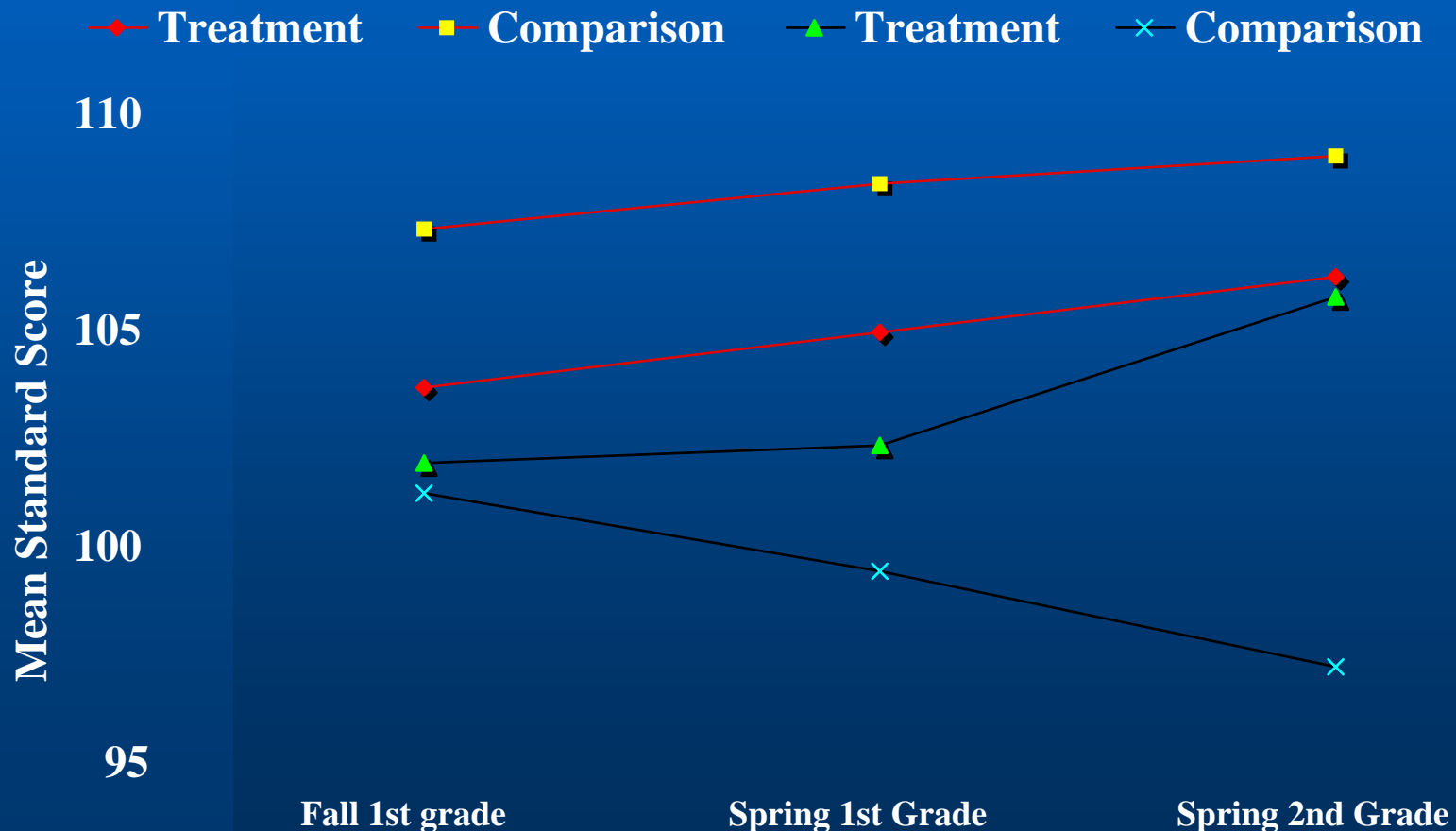|	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	103.64 (14.87)	NA	104.93 (14.74)	101.43 (12.08)	NA	106.21 (15.08)
Comparison	107.33 (14.16)	NA	108.38 (17.10)	112.21 (14.36)	NA	109.04 (14.62)

Problem Behavior Subscale

Problem Behavior Subscale

Problem Behavior Subscale

Low and High Responders:

# Problem Behavior Subscale

Subscale sample items include:

- **Fights with others**
- **Is easily embarrassed**
- **Acts impulsively**
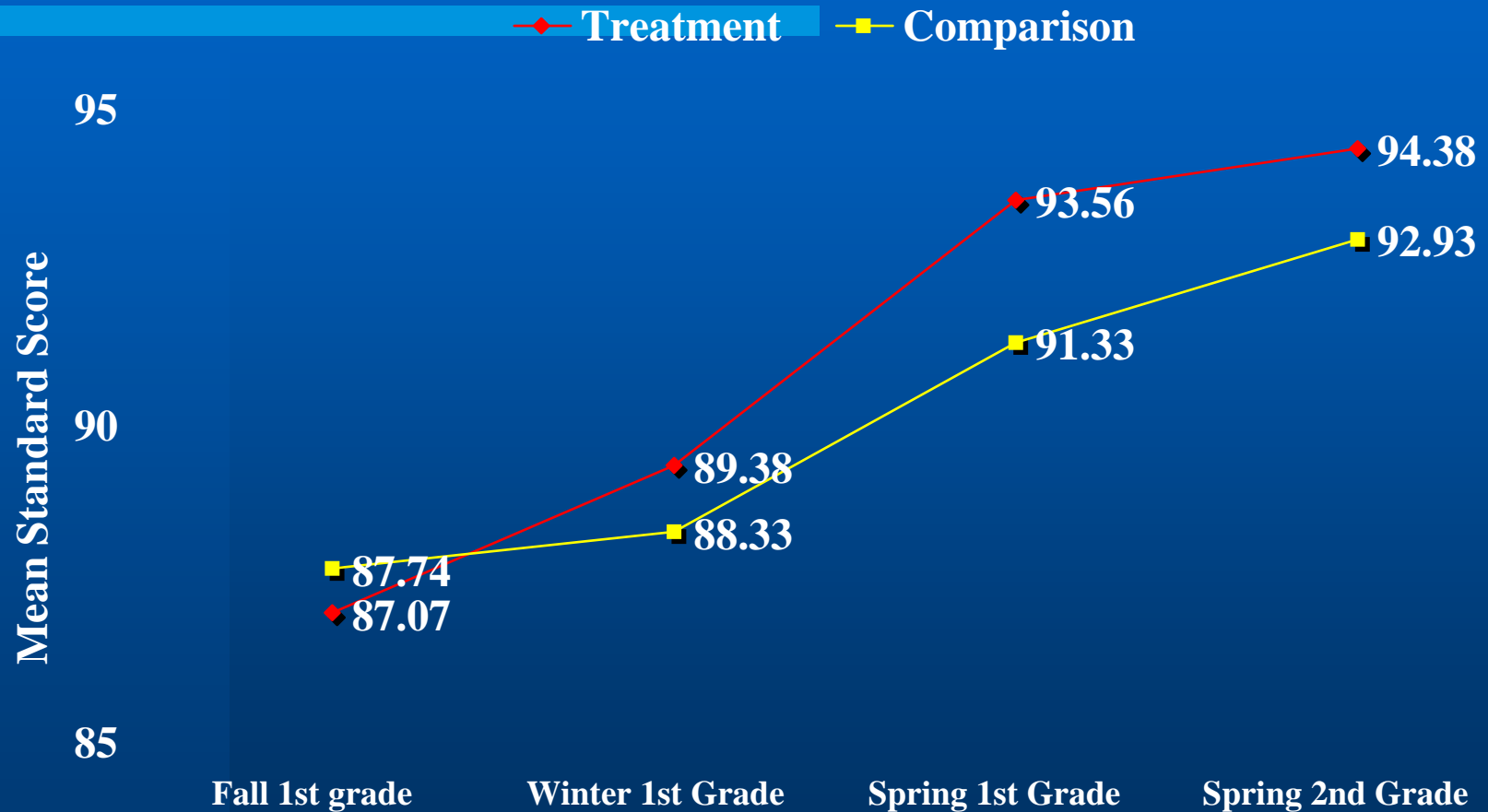
Academic Competence Subscale

High Responders:

	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	87.07 (10.56)	89.38 (8.57)	93.56 (7.66)	NA	NA	94.38 (10.19)
Comparison	87.74 (10.64)	88.33 (9.20)	91.33 (9.73)	NA	NA	92.93 (8.97)

Academic Competence Subscale
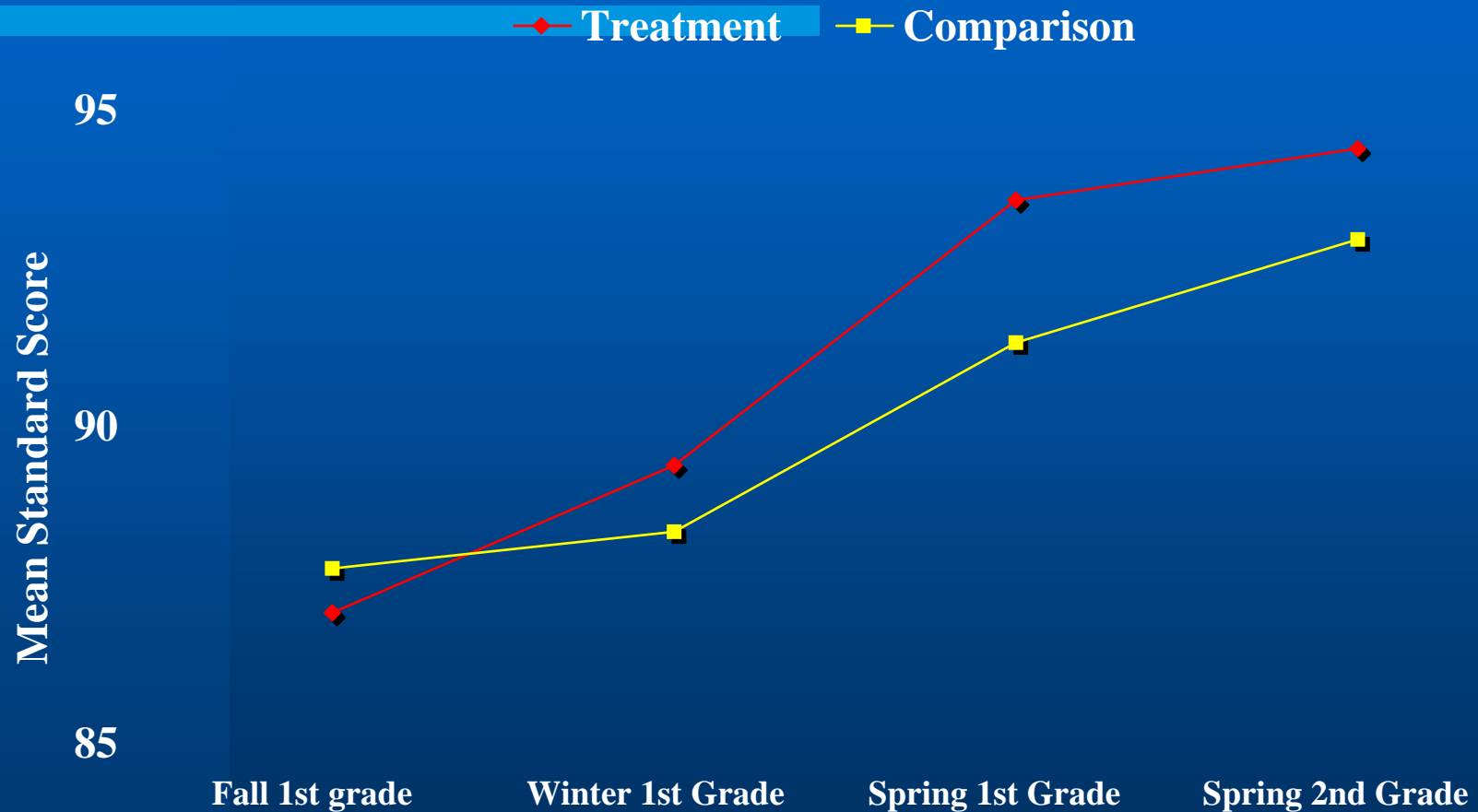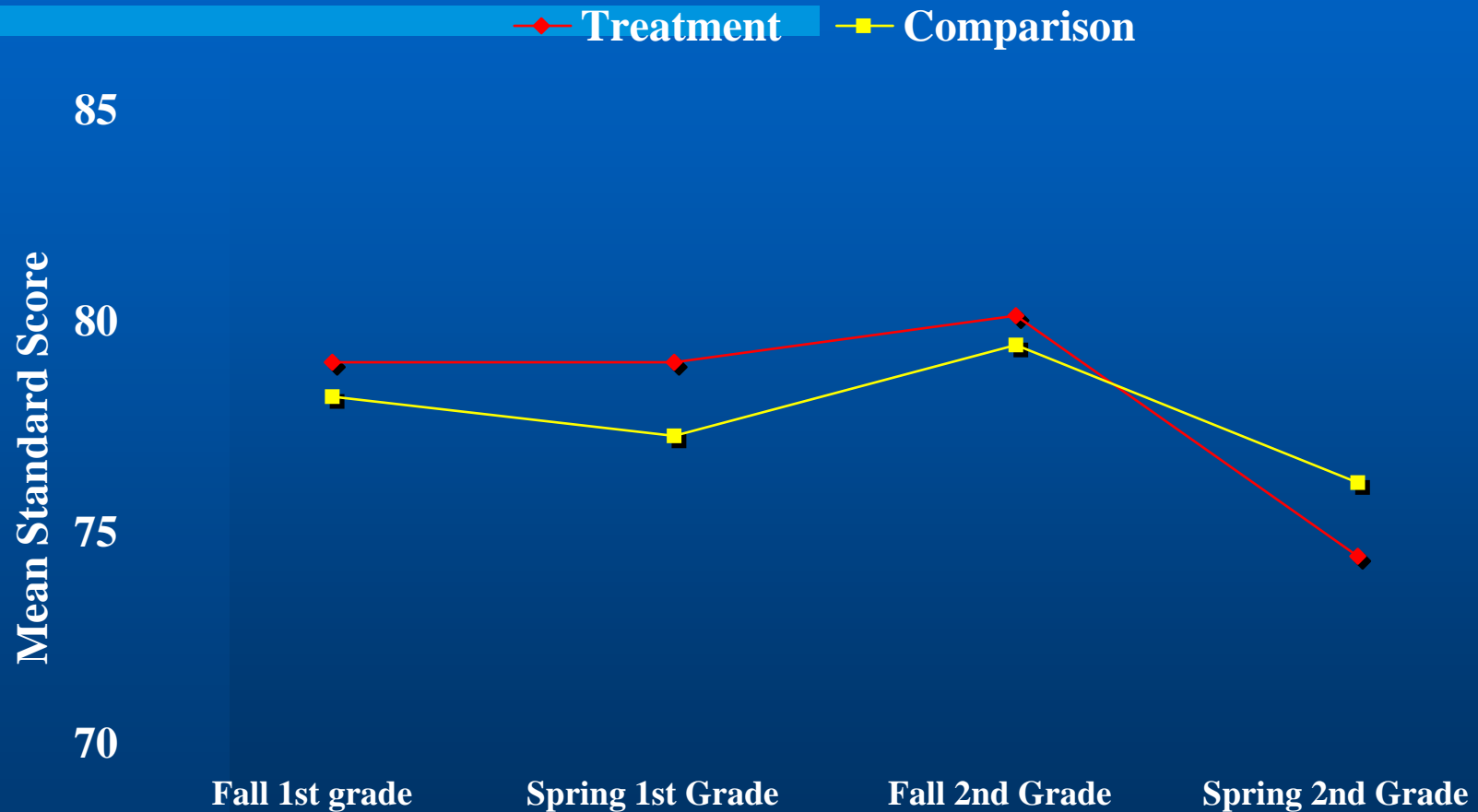
Academic Competence Subscale

Academic Competence Subscale

Low Responders:

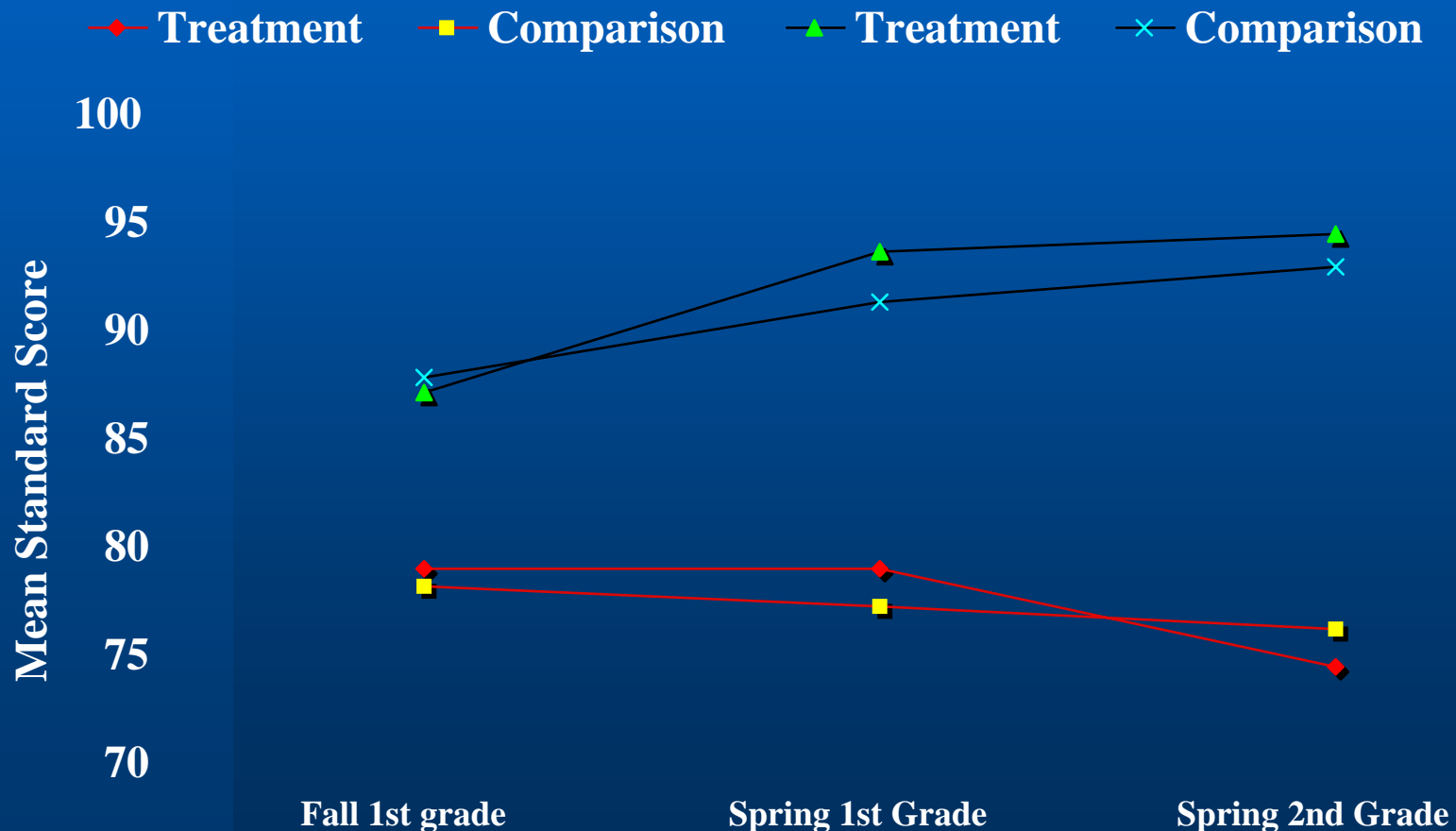|	Fall 1st Grade	Winter 1st Grade	Spring 1st Grade	Fall 2nd Grade	Winter 2nd Grade	Spring 2nd Grade
Treatment	79.00 (7.07)	NA	79.00 (10.37)	80.14 (7.27)	NA	74.43 (9.91)
Comparison	78.17 (9.46)	NA	77.25 (8.50)	79.42 (7.38)	NA	76.17 (9.73)

Academic Competence Subscale

Academic Competence Subscale

Academic Competence Subscale

Subscale sample items include:

- **In reading, how does this child compare with other students?**
- **This child's overall motivation to succeed academically is?**

Gains Per Hour Intervention

	Word ID	Word Attack	Read Comp
High Responders (~25 hrs.)	.23	.16	.29
Low Responders (~130 hrs.)	.04	.12	.10

Costs for High and Low Responders
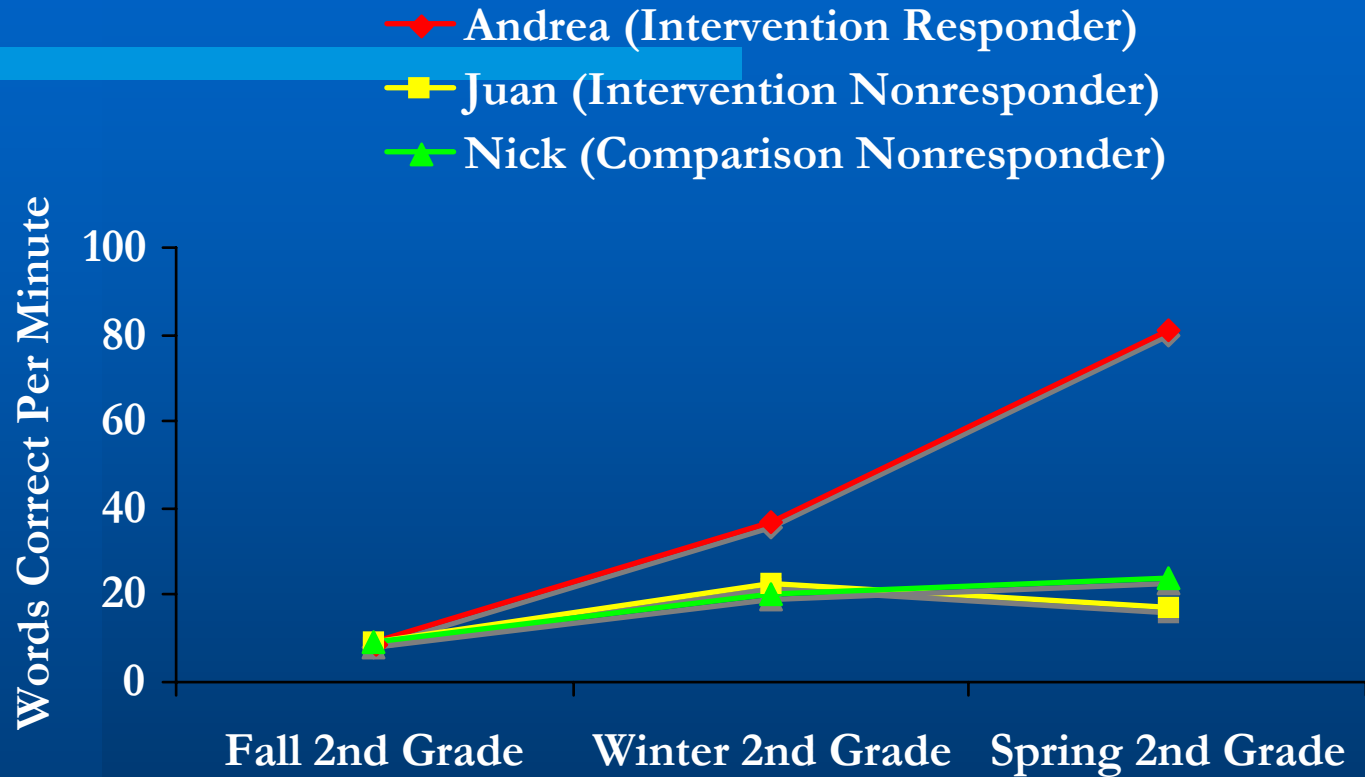
Estimating tutors pay @ $50 per hour (high estimate allows for planning and training)

High Responders: $50 X 25 hours; $50 X 50 hours; divided by # in group (5) = $250 to $500 per child

Low Responders: Cost of Tier II = $500

PLUS Tier III $50 per hour X 83 hours divided by 3 = $1400 per child the second year. Tier II ($500) plus Tier III ($1400) = Approximately $1900 per child

Individual Cases

Legend:
- Andrea (Intervention Responder)
- Juan (Intervention Nonresponder)
- Nick (Comparison Nonresponder)

Y-axis: Words Correct Per Minute (0, 20, 40, 60, 80, 100)

X-axis: Fall 2nd Grade, Winter 2nd Grade, Spring 2nd Grade

Juan

- **Hispanic Male**
- **Identified with autism**
- **Continuously in district 1st-3rd grade**
- **Received Free/Reduced Lunch Services 1st-3rd grade**
- **Minimal school absences (2-8 days per year)**

Juan PPVT

Spring First Grade	Fall Third Grade
77	84

Alita

- **Hispanic female**
- **Continuously in district 1st-3rd grade (moved January 2007)**
- **Identified as "other health impaired" in third grade**
- **Received free/reduced lunch services beginning winter of first grade**
- **9 school absences in first grade; 26 absences in second grade**

Alita PPVT

Spring First Grade	Fall Third Grade
78	75

Isabel

- **Hispanic female**
- **Continuously in district winter of first grade-3rd grade**
- **Identified with learning disability in first grade**
- **Received free/reduced lunch services 1st-3rd grade**
- **Minimal school absences (2-6 per year)**

Isabel PPVT

Spring First Grade	Fall Third Grade
85	80

Third Grade Intervention (in progress)

- **Daily, 50-minute sessions provided in addition to classroom reading instruction**

- **1:1 instruction provided by tutor hired and trained by research staff**
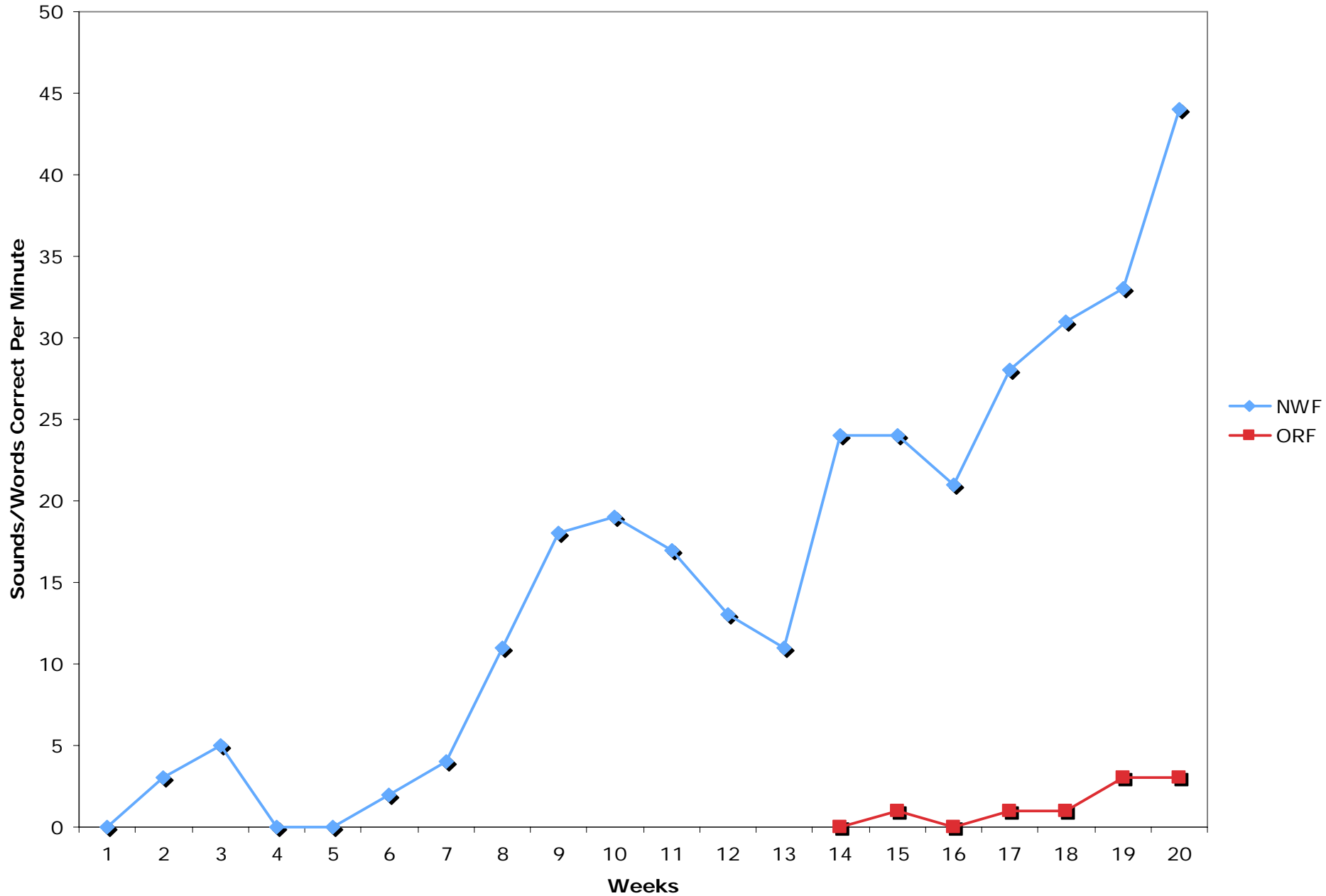
Third Grade Intervention (in progress)

- **Baseline**
  - **Continue with Second Grade Intervention**
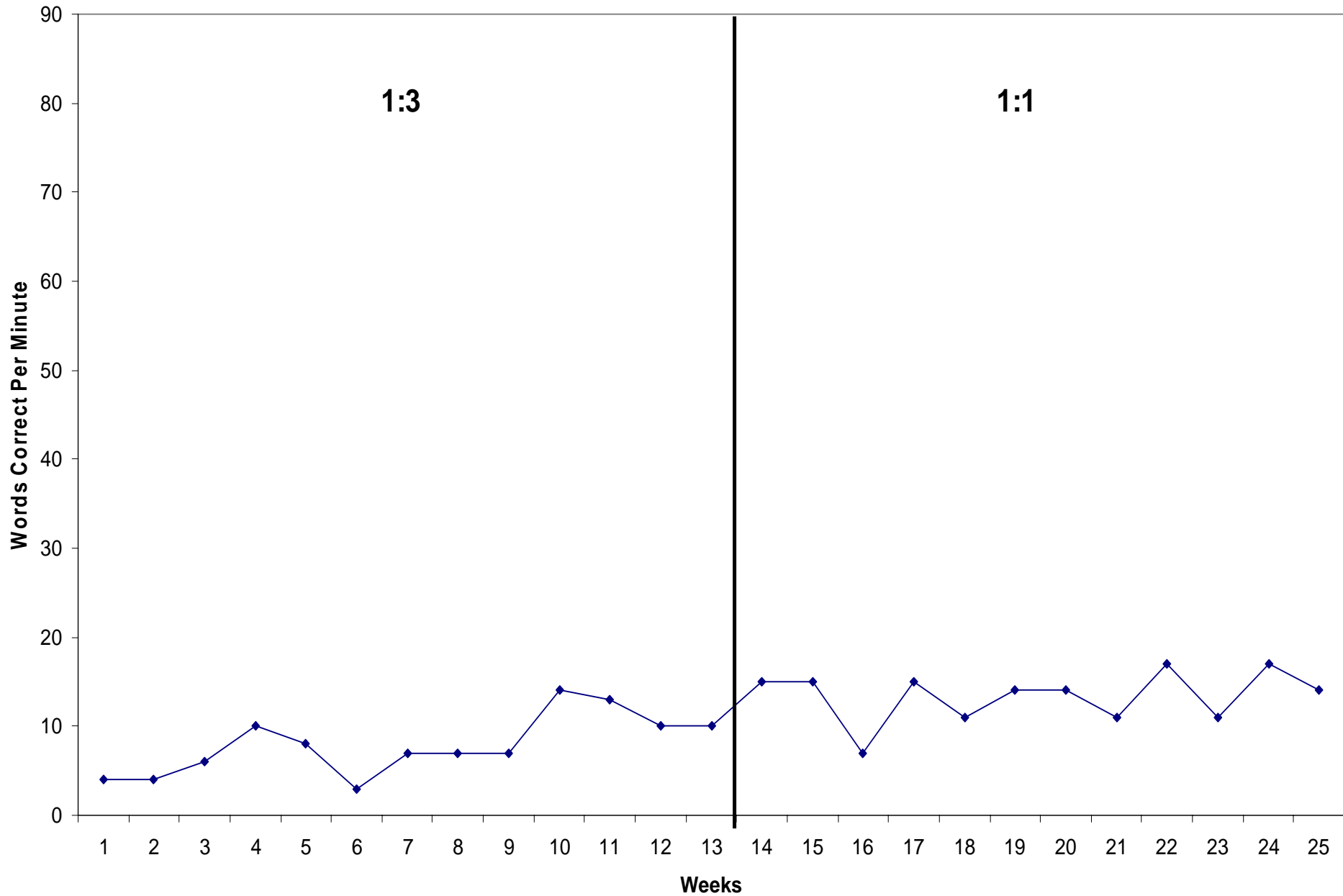- **Alternative Intervention**
  - **Word Work (15-18 min.)**
  - **Text Reading (15-20 min.)**
  - **Comprehension (10 min.)**
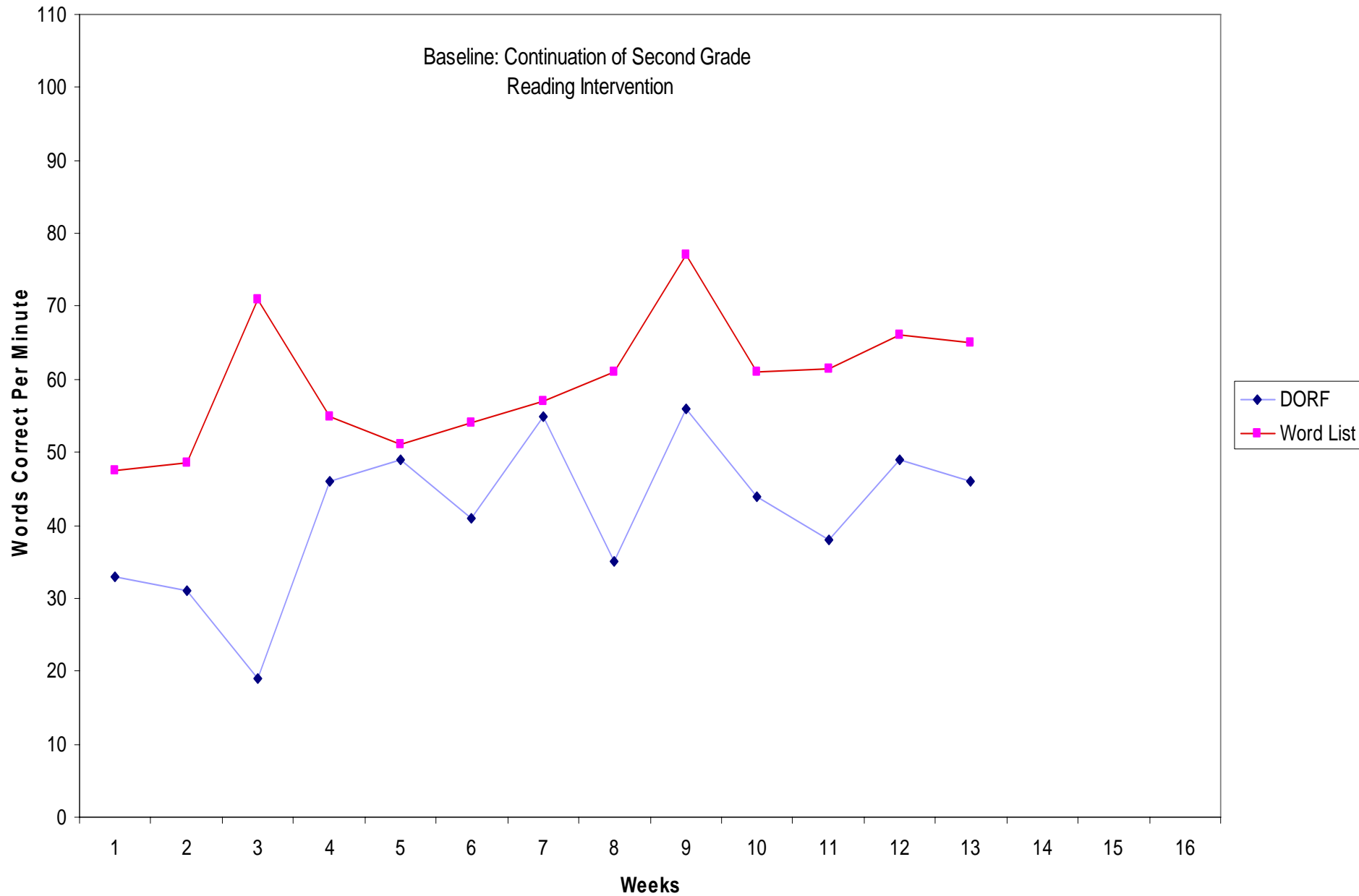 - **Fluency (5-7 min.)**

Juan

Juan: First Grade Progress Monitoring

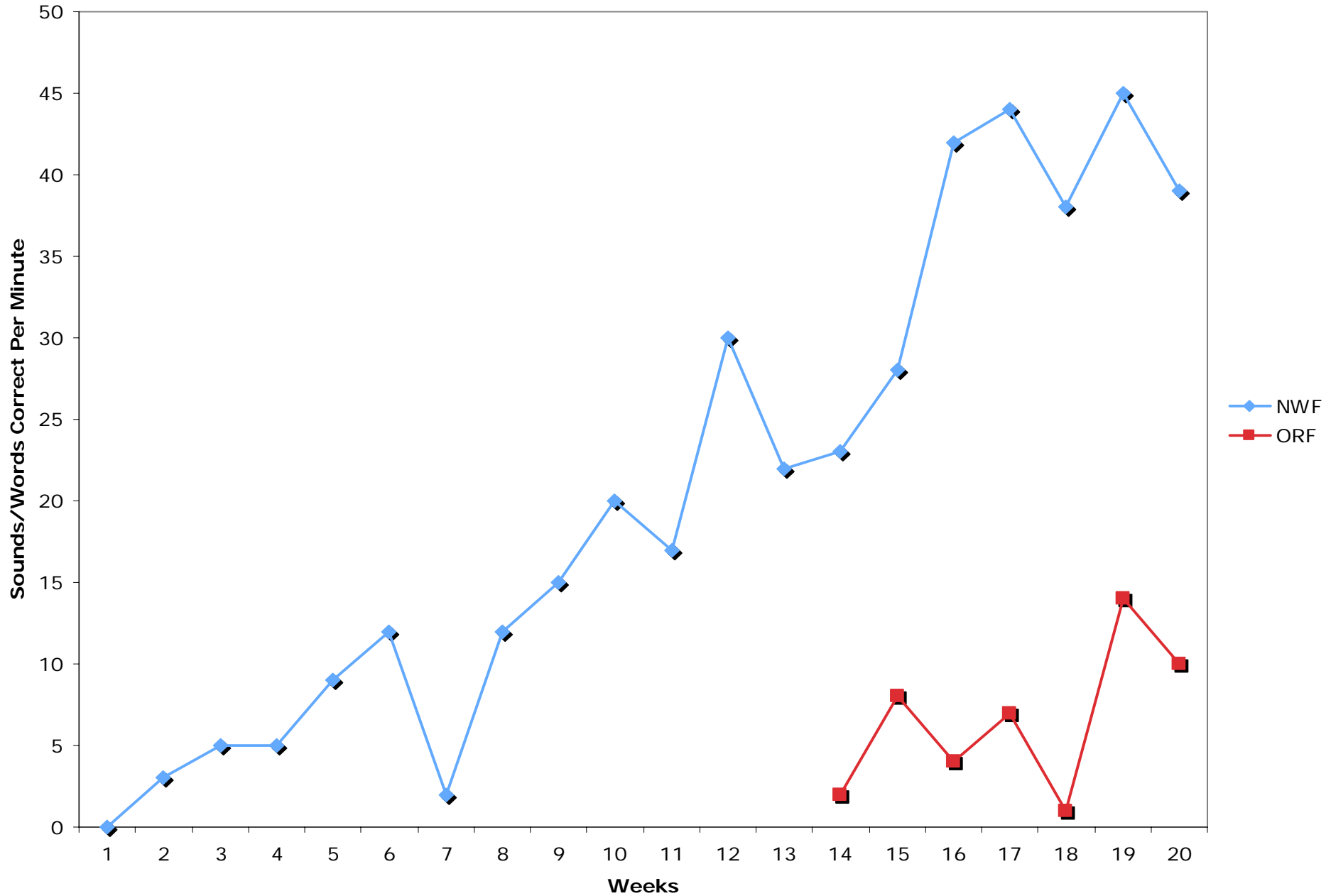# Juan: Second Grade Oral Reading Fluency

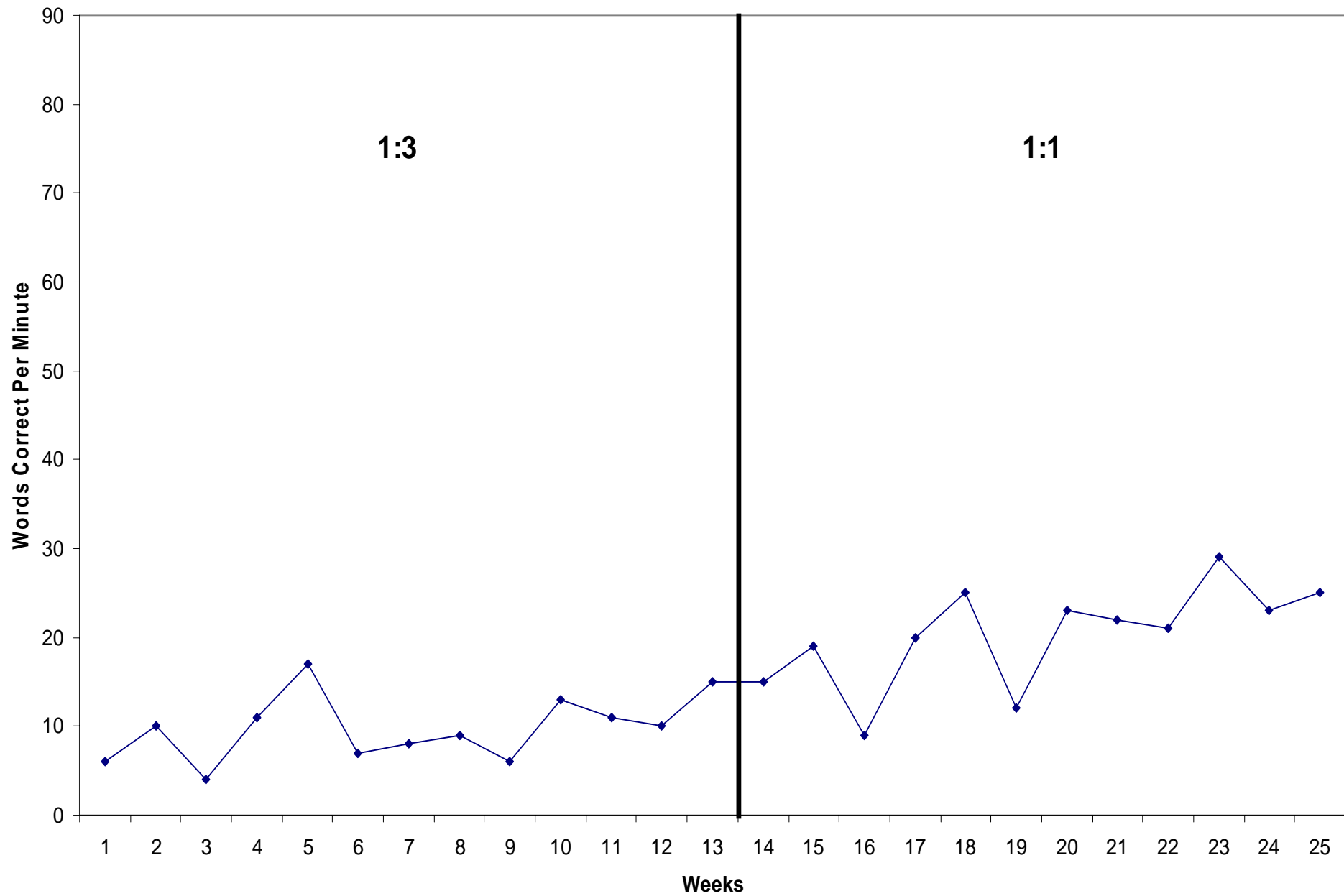# Juan: Third Grade Progress Monitoring

Baseline: Continuation of Second Grade
Reading Intervention

Words Correct Per Minute (y-axis: 0 to 110)

Weeks (x-axis: 1 to 16)

Legend:
- DORF
- Word List

Alita

Alita: First Grade Progress Monitoring

Alita: Second Grade Oral Reading Fluency

A line graph titled "Alita: Second Grade Oral Reading Fluency" with the y-axis labeled "Words Correct Per Minute" (ranging from 0 to 90) and the x-axis labeled "Weeks" (1 to 25). A vertical dividing line separates the graph into two phases: "1:3" (weeks 1–13) and "1:1" (weeks 14–25).

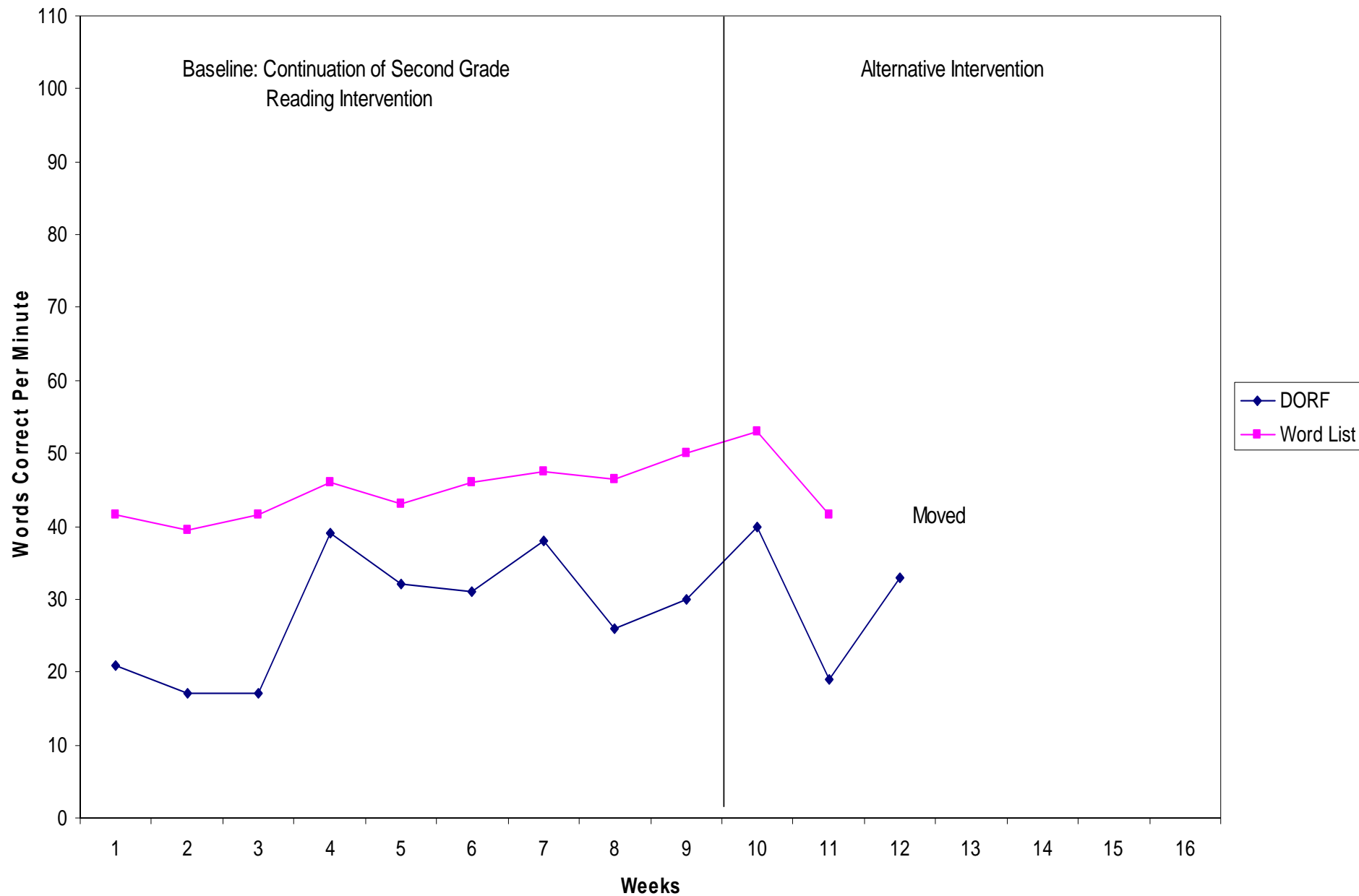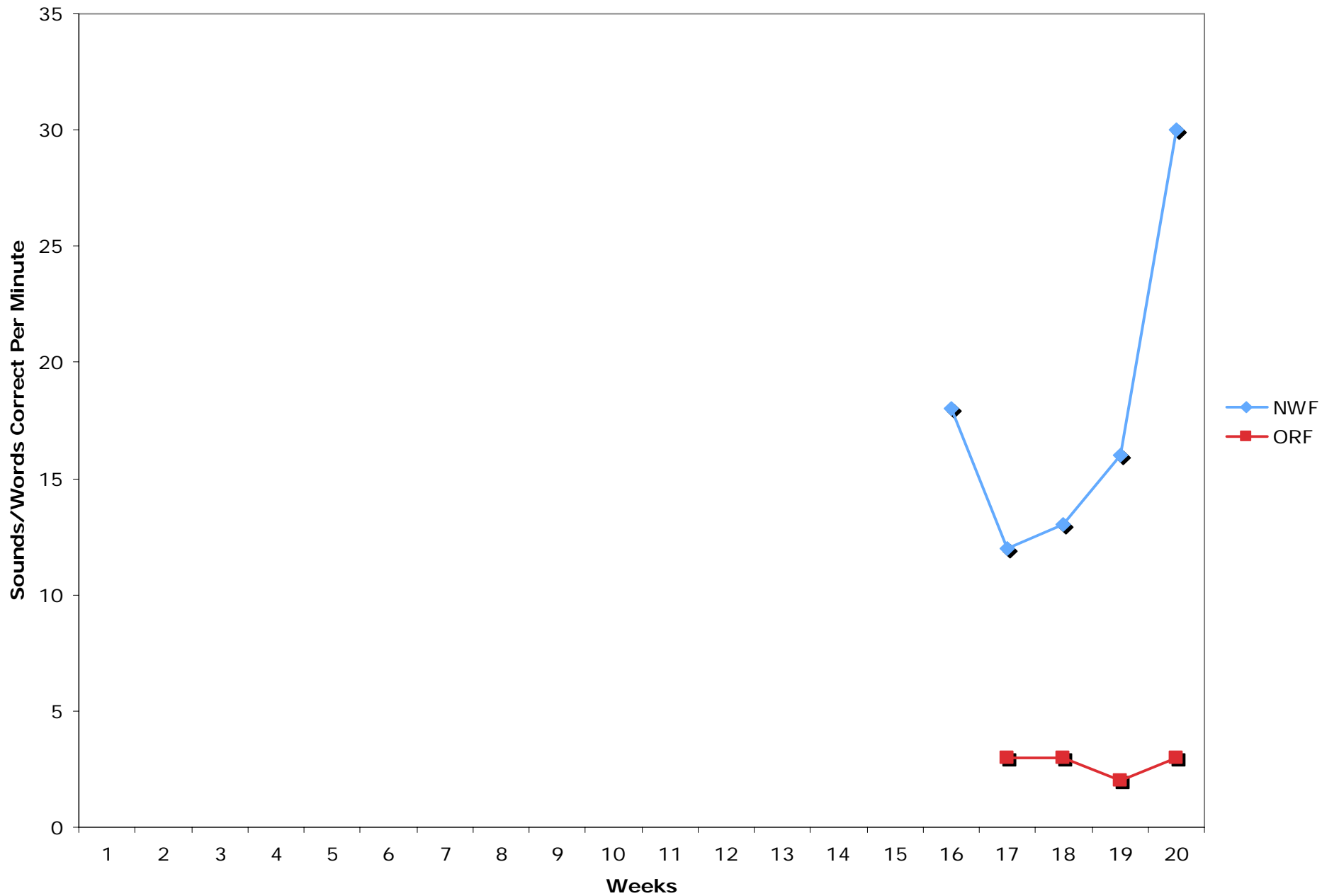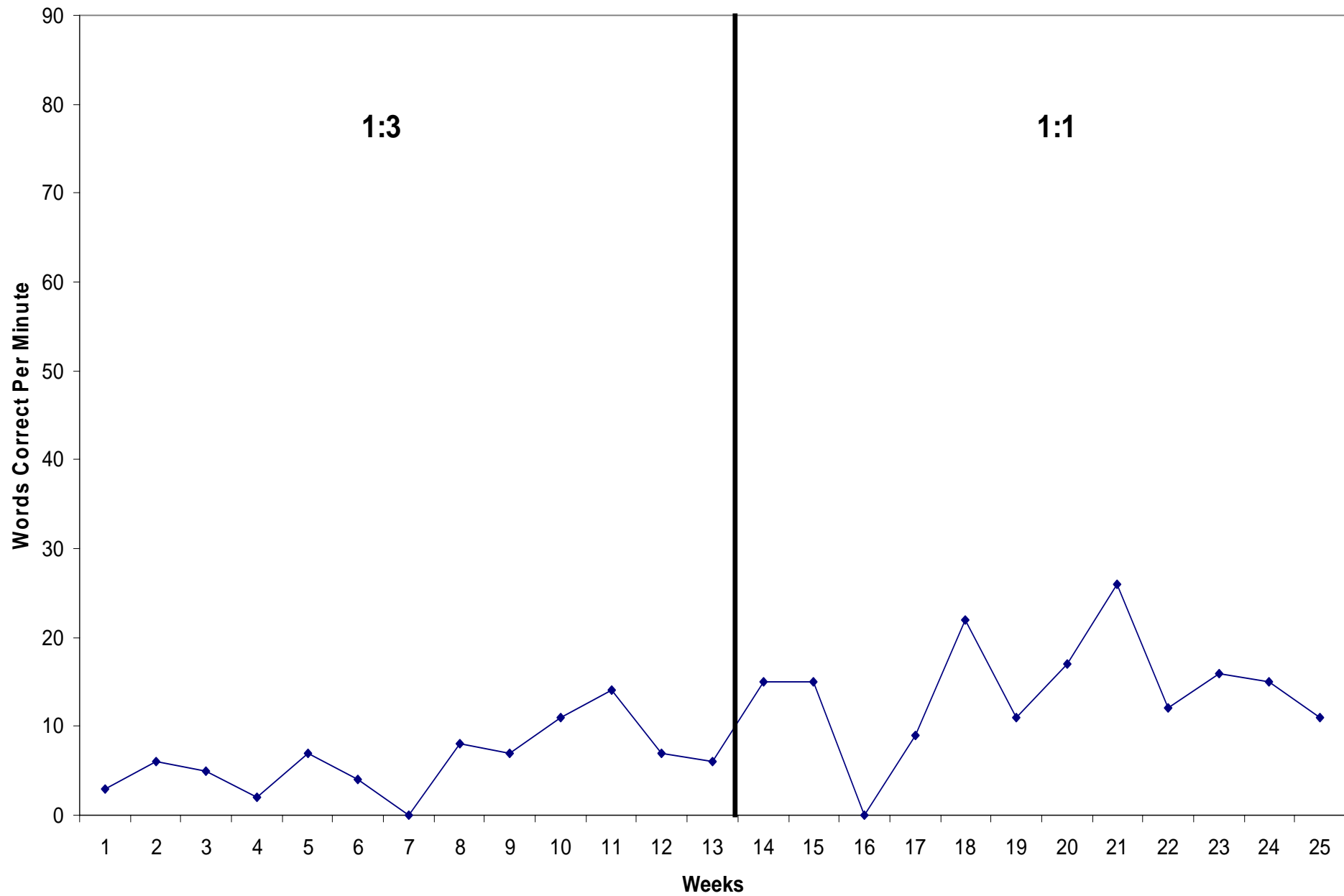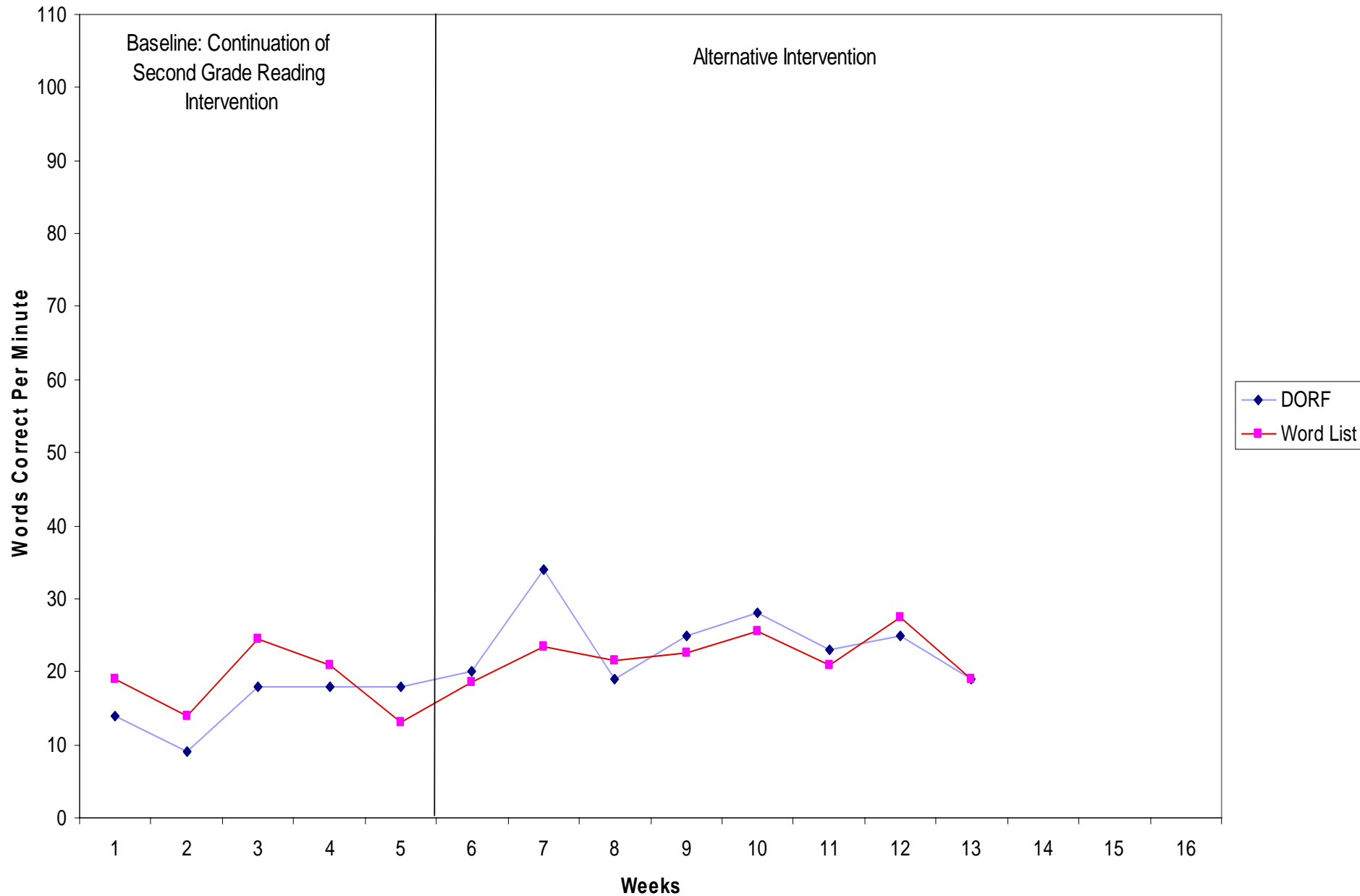**Alita: Third Grade Progress Monitoring**

Isabel

Isabel: First Grade Progress Monitoring

Isabel: Second Grade Oral Reading Fluency

Isabel: Third Grade Progress Monitoring

Baseline: Continuation of Second Grade Reading Intervention

Alternative Intervention

Words Correct Per Minute

Weeks

DORF
Word List

WRMT-R Standard Scores

Student	Word ID Spring 1st	Word ID Spring 2nd	Word ID Winter 3rd	Word Attack Spring 1st	Word Attack Spring 2nd	Word Attack Winter 3rd	Pass Comp Spring 1st	Pass Comp Spring 2nd	Pass Comp Winter 3rd
Alita	92	87	--	108	101	--	88	88	--
Juan	89	87	99	107	107	110	60	81	96
Isabel	81	77	81	74	82	86	79	67	70

SSRS Standard Scores

Student	Social Skills Spring 1st	Social Skills Spring 2nd	Problem Behavior Spring 1st	Problem Behavior Spring 2nd	Academic Competence Spring 1st	Academic Competence Spring 2nd
Alita	122	95	103	112	73	67
Juan	130	84	115	112	74	74
Isabel	89	80	98	95	79	65

Prevailing Questions

- **Tier I is enhanced classroom instruction.**

- **Tier II is 25-50 hours of small group instruction**

- **Tier III is > 125 hours of small group instruction**

Back to the Sp Ed Director

"What advice do you have?

p.s.

How do we do RTI?"